Understanding Stakeholder Feedback in Digital Contexts

**Abstract**

This article utilizes adaptive structuration theory to examine how employees use digital technology to communicate externally and how they respond to stakeholder feedback in the form of digital analytics. Extant research often overlooks how stakeholder feedback is incorporated into employee day-to-day work. Focusing on employee perception of work routines, this study asks whether increased access to task-related feedback enhances or detracts from routines. Growing availability of and access to digital analytics contributes to the assumption that incorporating feedback from key audiences increases future work efficacy. Using interview data from large multinational organizations, findings demonstrate that information communication technology, managerial pressure, and organizational norms can inhibit feedback loops that enable adaptive structuration. Integrating analytics provides a means for employees to implement thoughtful external communication. Yet due to structural and cultural factors, employees are often unable to fully utilize feedback gathered from analytics and make improvements for engaging stakeholders.

*Keywords:* adaptive structuration theory, digital analytics, routines, external stakeholders, information communication technology

 **Understanding Stakeholder Feedback in Digital Contexts**

Modern organizations increasingly aspire to embody an organizational culture that prioritizes data-driven decision-making (Waller, 2020). This has led to an influx of new data availability for a variety of organizational tasks, including external communication. It is common to have employees who are responsible for managing communication with external stakeholder communication in large multinational organizations, often in corporate communication roles where information communication technology (ICT) is used to manage day-to-day external communication. ICTs generate digital analytics data and metrics (e.g., information pertaining to website traffic, email engagement, and interactions with social media properties) that can be analyzed to communicate and manage relationships. Digital analytics as a form of data represented as aggregated measures that can be used to explain the efficacy of communication efforts with analytics software designed to deliver summary information; metrics are specific measurements that summarize analytics. Employees in corporate communication roles are expected to engage external stakeholders and evaluate the success of their interactions through datapoints from a multitude of sources (Kingsnorth, 2019). While there are often large volumes of data (coming from a variety sources and platforms related to various organizational goals), it is unclear whether data provides information relevant to improve work routines (Järvinen, & Karjaluoto, 2015), or simply creates information overload.

Digital analytics are a critical component of external communication, but integration of complex data analytics into work routines is not well understood (Carpenter and Lertpratchya, 2106), and presents important questions for organizational scholarship (Lee, 2018). Additionally, digital technologies that provide employees with feedback via analytics are developing at such a rapid rate that it is unclear whether those using the technologies can adapt quickly enough to understand and integrate new data (Cao et al., 2013). To address these questions, adaptive structuration theory (AST) is used to understand use of ICTs to gather feedback from stakeholders in the form of digital analytics (DeSanctis & Poole, 1994). This work interrogates the notion of feedback loops and examines digital analytics as a form of looped feedback that helps to create new routines centered, focusing on the critical role of digital analytics as feedback (Sumner at al., 2020; Hayes et al., 2016). Thus, this study examines corporate communication employees managing external communication and focuses employee routines using analytics through the framework of AST to better understand feedback processes.

**Literature Review**

**Adaptive Structuration Theory as a Basis for Examining Feedback**

AST focuses on the complex dynamics of social structures that emerge within organizations as employees interact with one another, and how those structures co-evolve through the use of ICTs. AST is rooted in structuration theory (Giddens, 1979), which explores the creation and replication of social systems through structure and agents, but AST emphasizes communicative interactions using ICTs together with the structure and routines of employees and their work. The theory considers the communication dynamics and fluctuations of relationships of those dynamics to affect outcomes and adapt rules and norms to accomplish goals (Poole & DeSanctis, 1989). Poole and DeSanctis saw human interaction within organization as complex and further complicated by structuration driven by the use of and interaction with emerging forms of ICT. Communication, norms, and expectations evolve iteratively because of feedback from those within the cyclical loop of communication (DeSanctis & Poole, 1994). While AST does acknowledge the complexity of technologies in the adaptive process of structuration, feedback is traditionally conceptualized as human-focused and generally defined as any point within the communication cycle at which the sender and receiver may learn about the expectations, perceptions, and intentions of one another. AST is a lens to understand how feedback can impact structuration based on interaction between employees and with analytics and metrics (Aktaruzzaman & Plunkett, 2016).

Norms and repeat behaviors form when employees interact with and through a given ICT, and those norms and behaviors are then retained and impact future communication. For example, an employee may interact with a customer online by responding to a review on a website, setting the norm that communication may occur in the future. Responses shape future behaviors and lead to new routines. Internally, this occurs when employees adapt their day-to-day communication to insights received through digital analytics. Adaptation may include developing new patterns for external communication by shifting communication from one platform to another based on feedback. External communication can be understood as communication external to a team or organization, such as when employees communicate externally with potential or current customers, shareholders, activist groups or other key stakeholders. New routines are created through employee interactions, engagement with technology, and are simultaneously interwoven with the us of that technology (Barrett, 2018), as employees come to understand one another’s behavior and to develop expectations through the feedback occurring through the technology. Complexity increases when stakeholders are external because the interaction may be happening solely through digital technology absent in-person relationships or context.

While AST was initially developed as a forward-thinking framework, it has footing in current contexts because of its emphasis on interactive engagement between employees, both with one another and with technology. For example, AST has been applied in the context of digital human support systems to show the emergence of patterns of strructure through intentional community engagement via digital platforms (Niederman et al., 2008). Scholars have noted that within organizations it is the social interactions, and feedback between human communication, that can drastically impact organizational outcomes (Furumo & Melcher, 2006). As such, feedback, or the back-and-forth process between sender and receiver, plays a key role in AST and examining modern digital technology.

***The Feedback Process***

Feedback is information returned to the sender from the receiver regarding receiver perceptions of the communication and resulting expectations (Poole and DeSanctis, 1989). Feedback occurs when information is provided to the sender, often so that more efficient and expectation-aligned iterations of communication can occur. Feedback can occur through certain sociomaterial structures such as digital analytics. Digital analytics such as “likes” on Facebook are a form of feedback that can impact future routines. Then, this feedback must be taken into consideration for information-rich decisions to be made regarding changes in organizational processes. Namely, the sender must receive the feedback, understand the cues imbued within it, and utilize that knowledge in future communication.

Digital analytics and signals are a part of feedback loops within AST (Hayes et al., 2006; Barrett, 2018). Communication processes are likely to change because of the use of ICTs, but the way in which those ICTs are used is malleable – users of an ICT can appropriate or “hack” original features to better accommodate their specific working tasks and needs (Barrett, 2018). When this happens, technologies evolve and understood uses evolve as well (Chindu Eze et al., 2014). Feedback loops are a central process for organizations, especially when they are reliant on digital analytics as a means of understanding interaction.

***AST and Large Multinational Organizations***

 Focusing on ICTs and organizing, AST examines processes such as how routines in administrative and training tasks between human resources personnel and employees have utilized digital management systems (Turner et al., 2019). Examining the interaction between the employee and the technology, AST brings to light the routines that emerge considering the intended use of a given artifact of technology (Schmitz et al., 2016; Barrett, 2018). AST has traditionally been applied in the context of teams, but recent work extends this to external contexts (e.g., Sumner et al., 2020). Emphasis on external stakeholders integrates a wider variety of perspectives and roles, and the employee must grapple with interpreting a more diverse array of feedback from a wider range of stakeholders. The complexity of ICTs in already complex work environments can impact the way organizational actors interact with external stakeholders (Greenhalgh & Stones, 2010). Furthermore, the swift-moving nature of ICT development can outpace the capabilities of the organization to absorb new functions and uses (Cao et al., 2013). As a result, it is unclear how employees in external communication roles may use ICTs and/or more traditional methods to integrate external stakeholder feedback. This may have implications for organizational nimbleness, employee satisfaction, and overall organizational efficiency in the face of communicating digitally. Thus, we pose the following research question:

*RQ1: How do employees integrate digital analytics feedback from external stakeholders into their day-to-day work routines?*

***Human Relationships Through Technology***

AST s frames technology as part of the process rather than as an endpoint. Recent efforts emphasize the need to understand how people collectively make sense of analytics and metrics generated by digital platforms (e.g., Zamith et al. 2019; Dennis et al. 2017), as opposed to examining the analytics and metrics themselves. For positive relationships to develop through organizational communication, reciprocal communication must occur between employees and their alters (Argyris & Monu, 2015; Morsing & Schultz, 2006). For instance, external stakeholders are likely to engage positively online if they feel they are being heard and that their feedback leads to appropriate adaptations (Askay, 2011). Employees must listen and respond to others involved in the communication and adapt accordingly for adaptive structuration to occur. This is particularly true when employees are in job roles where their primary responsibility is to manage external communication. For employees to listen to and employ feedback from stakeholders, they generally must feel that the feedback has inherent value (Anseel et al., 2015; Turner et al., 2019). To understand how feedback is incorporated into day-to-day routines, this research examines the way in which employees place value on digital analytics feedback:

*RQ2: How do employees value digital analytics feedback in their day-to-day routines?*

***Perceptions of ICT Use as a Function of AST***

It is important to understand how employees frame their use of ICTs and how that use is integrated within the flow of additional job functions as part of the day-to-day routine of work (Van Wart et al., 2017). Employees use ICTs with varied aims and goals (Chin et al., 1997), resulting in a variety of routines. This routinization of ICT use is central to the development of new structures. Therefore, barriers that may inhibit structuration processes, as postulated in the following research question :

*RQ3: What obstacles prevent employees from adapting to digital analytics feedback from external stakeholders in the form of digital analytics from external sources?*

***ICTs, Changing Audiences and Structures***

 Employees must adapt to increased fragmentation in day-to-day job roles hand-in-hand with increased use of ICTs. There are more options available for engaging with others, and employees often navigate through a process of bricolage whereby they experiment with various communication platforms and use feedback to gauge success (Johri, 2011) while navigating multicommunciation across simultaneous mediums used for day-to-day work (Reinsch and Turner, 2008). It is unclear how employees manage feedback in contexts where they face situations of information overload, creating added stressors that impact employees’ ability to manage feedback (Leiter, 2017):

*RQ4: How does information overload impact employees’ ability to integrate digital analytics feedback from external stakeholders into their day-to-day work routines?*

Modern employees utilize ICTs to facilitate relationships (Wei et al. 2018). Scholars agree that for a technological relationship to occur successfully both the technology and the audience must simultaneously adapt to one another (Turner et al., 2019). These four research questions, taken as a whole, provide a view of AST in the context of digital analytics and external stakeholder feedback by examining how employees who communicate externally integrate the digital feedback they receive on a day-to-day or routine basis (RQ1) and how their valuation of the feedback impacts the integration and use of the information (RQ2). Further, this work considers obstacles that occur in utilizing the feedback, both organizational and normative (RQ3), and asks how digital technology provides an abundance of information or feedback – as well as what that means for subsequent communication feedback loops (RQ4). In addressing these questions, this study aims to learn more about each aspect of the AST process considering digital analytics and understand where challenges or opportunities exist.

**Methods**

Interviews were used as the primary method given the focus on the nuances of workplace routinization, the individual nature of those routines, and the complexity of organizational use of digital analytics. Interviews were used to glean a better understanding of the utilization of digital analytics feedback, as well as the use of analytics as a practice within their day-to-day work.

**Digital Content Marketing as a Case Study**

Digital content marketing (DCM) is a goal-oriented form of external communication, wherein “the management process responsible for identifying, anticipating, and satisfying customer requirements profitably” through digital communication occurs (Rowley 2008, p. 522). DCM is a useful strategy for engaging with external audiences via ICTs, keeping their attention, and nurturing strategic behavioral intention (Ashley & Tuten, 2015). Effective DCM garners the attention of external stakeholders and help establish trust between communicator and audience (Duhon, 2015), as well as increasing stakeholder loyalty (Wang et al., 2016). For example, external stakeholders may follow the organization’s social media accounts, receive regular emails, or have a personal relationship with specific members of the organization. The organizational goal is to encourage external stakeholders to engage in desired behavior.

Content for DCM may include open-access efforts such as blogs and emails, “gated” (requiring contact information to access) content, such as e-books, white papers, toolkits, social media, pre-recorded videos, and live events such as webinars (Wang et al. 2017).According to Martech Advisor (McCoy, 2019), DCM was worth $412b in 2021. DCM was selected for this study because employees working within this industry are in a swiftly growing field of technically skilled employees whose primary day-to-day responsibilities include external communication . Employees in these job roles often rely on digital analytics to measure and evaluate their work.

***Participant Sample***

Participants were recruited through convenience sampling and were invited to participate if they had expertise in DCM. Expertise was determined through tenure, job experience, and job role responsibility in terms of budget allocation. Each participant had at least five years of relevant industry experience. Participants worked in units that had more than $100 million in combined annual communication budget through their organizations and clients. Interviewees included employees from communication agencies, Fortune 10 companies, venture-capital funded tech startups, private equity-funded organizations, and software as a service (SaaS) (see Table 1).

***Reflexivity Statement***

All participants were professional contacts known through the lead author’s work experience in DCM. This previous experience allowed the lead author to interview participants in “their language” using terminology and to seek clarity when necessary. Convenience sampling plus prior experience created a sense of familiarity between participant and lead author, and contributed to the co-constructed nature of qualitative research. The lead author conducted primary coding to fully translate the jargon and language specific to the context of the inquiry, but both authors engaged in discussion to reach alignment on codes.

**Data Collection and Analysis**

Semi-structured phone interviews between 30 and 90 minutes were conducted with 18 digital content marketers. In total, 19 hours of interview data were collected. Phone interviewing is advantageous for interviewing due to the ability to work with participants in diverse locations, mitigate cost, and access difficult-to-reach populations (Drabble et al., 2016) as well as perceived anonymity, privacy, and reduced distraction (Cachia and Millward, 2011; Lechuga, 2012). Participants received a $10 Amazon gift card upon completion of the interview.

 Participants were asked a series of questions to better understand their situation and cultural norms (*e.g., “Do you feel your direct manager knows what you do?”)* and how they define success in a communications effort utilizing digital analytics *(e.g., “How do you use analytics to decide if an effort was successful or unsuccessful”*). Participants were also asked about managerial involvement in the communication process and routines regarding digital reports (e.g., *“How much time do you have prior to and following a communication effort to analyze analytics results or conduct preliminary research?”*). Lastly, participants were asked to explain the role of digital analytics on future efforts (*e.g.,* *“Do favorable digital metrics play a role in the evolution of your role and future routines?”*).

Data analysis focused on a three-cycle iterative process to code emergent themes from the interview data. First cycle coding included structural and descriptive codes in order to better parse out and organize the transcripts (e.g., words such as schedule, time, stress, analytics); second cycle coding included initial categorization of codes based on similar themes (e.g. managing routines, day-to-day considerations, working with ICTs); and third cycle coding focused on creating umbrella categorizations based on themes and connections to the theoretical framework (e.g., research questions and AST) (Saldaña, 2021). This coding process was implemented to organize transcript data, create categories, and further examine these categories based on overarching themes. All transcripts were saved with pseudonyms and company names and other identifying information redacted from the transcripts; the data itself was saved in secure cloud storage where only the authors had access. All interviews were recorded using Google Voice, exported as audio files, and transcribed, resulting in 208 pages of text.

**Results**

This participant collaboration yielded co-constructed results that advanced understanding of structuration processes in organizations, and further knowledge about employees’ use of digital analytics to communicate externally. Specifically, the findings indicate that employees have challenges integrating feedback from digital analytics into their day-to-day routines (RQ1) due to constraints of workplace culture which diminish the functional value of the digital analytics in marked instances (RQ2). These constraints create obstacles in gathering feedback and integrating them into workplace norms (RQ3) often resulting in reductive t reporting and feedback integration (RQ3). These constraints often include information overload due to the volume of digital analytics available (RQ4).

**Capturing External Communication Feedback**

Interviewees noted many ways in which they captured and integrated digital analytics in their work routines (RQ1). When asked about the digital metrics collected, interviewees referenced industry understandings of metrics and a taken-for-grantedness. Participant 4 noted:

*We have every type of digital analytic data available from where and when they entered our own proprietary website, where they came from, what it is they clicked where they came from, and in the interest of time marketers put together a puzzle of what those actions mean and how to target them next.*

Multiple interviewees shared similar examples in which a digital metric was understood to be indicative of desirable human behavior (e.g., visiting a landing page, inputting personal information into a form, following on social media, etc.). This shows how employees develop a routine of interpreting feedback such as clicks to convey a certain type of meaning from external stakeholders. This is the foundation of how participants subsequently integrate the data feedback into day-to-day work routines.

Metrics are often located on the back end of a communication system or via a user dashboard[[1]](#footnote-1). For instance, Salesforce provides the employee with metrics to measure interactions with external stakeholders (See Figure 1). Often, several metrics are collected through different ICT dashboards and combined by external communication professionals as an overall understanding of the behavior of the audience. For instance, industry established metrics such as time on-site, pages per visit, and bounce rate2 collectively speak to “engagement” with content. This feedback is recorded in the form of weekly, monthly, or campaign-relevant reports that are often maintained as spreadsheets or PowerPoints and used as performance updates within the organization. This illustrates how metrics become a report and a summation of information that is become part of the organization’s routinization.

**The Value of Digital Analytics Feedback to Employees and Leadership**

Interviewees shared perceptions that external stakeholder feedback has value, yet there was variation in terms of the extent. Digital feedback is particularly valuable to employees if it conveys that the communication was successful. Interviewees noted that success in terms of a particular digital metric could influence future decisions. However, digital feedback alone was not enough to understand feedback coming from external stakeholders. Using analytics as a sole source of feedback posed the risk of making false equivalencies between digital metrics and what stakeholders intend to communicate (e.g., equating clicking a link in an email with being legitimately interested in the product or service). To capture external communication efforts, a combination of data points was needed in addition to explicit stakeholder feedback (e.g., surveys, focus groups, and interviews). This combination of digital metrics paired with explicit, and often qualitative, feedback, was preferred but often unavailable.

Participants noted digital analytics were integrated as feedback because they were generally easy to obtain but felt that analytics were not always used for their intended purpose. In discussing the value found in digital analytics they often referenced real-time information, Lucy H.\*[[2]](#footnote-2) explained:

Digital communication is a new world because we are so much surer about when things happen. Before, when someone viewed an advertisement or an in-home piece of marketing, we might know that they saw the communication and made a purchase, but we don’t usually know how long it took for that to happen.

This highlights how metrics convey value in that they help illuminate what (and when) actions were taken by stakeholders due to external communication efforts. This echoes the sentiment of participants that analytics provide a timely value-added solution to previous measurement challenges. For example, while a survey or focus group may provide valuable nuance as to why a campaign did not reach desired levels of engagement, participants would also know a campaign was unsuccessful through real-time analytics feedback. However, the ability to glean long-term best practices was often unclear from digital metrics, despite technological advantages.

**Digital Analytics Analysis as Crucial to Job Function**

 The day-to-day work of employees in DCM requires the management of multiple ICT systems and routines. Feedback was a key part of the communication routine in terms of the structure created by feedback loops for reducing volume and focusing future efforts. Through the interviews, it was clear that though there was some doubt about the efficacy of digital feedback, participants found value in that they helped to create effective routines as compared to the routines that existed in the absence of analytics (RQ2). However, the fast-paced reality of their work had a significant impact on the ability of employees to learn more about external audiences prior to initiating communication (RQ3). The multi-layered demands and expectations of employees working in DCM roles meant that even when metrics where highly valued, they were not always able to utilize them to their full potential due to a variety of factors: lack of supervisor confidence in the feedback, time constraints, or organizational norms that prioritized speed over quality (RQ3). Participants noted that focus groups, surveys, and interviews were often unviable due to cost (one participant shared that focus groups can cost “upwards of $40,000”), and subsequently digital analytics data provided the clearest available method of examining feedback. As John M. noted, this was frustrating for a number of reasons:

The (implication) is that our dashboards and our analytics are a substitute for (human) sentiment because they aggregate the behaviors of our customers. But I’m often unconvinced that our metrics are not a 1:1 for how our audiences feel.

Time was also a constraint. When participants expressed faith in the value of digital analytics feedback, they felt a need for the time to assemble metrics and analyze them without pressure to move immediately to the next task. Tammy P. explained :

The inability to analyze metrics is an issue because content marketing is cyclical. You need to be able to understand why something didn’t work to optimize and want to change what comes next or what you create next. Then the organization suffers.

Because participants felt they were unable to take advantage of the metrics in a thoughtful manner, they subsequently felt they were not able to successfully iterate digitally and communicate better.

**Obstacles to Digital Analytics Feedback Use in Practice**

Participants were asked to elucidate the obstacles that occur in the analyzing digital analytics and aspects of organizational culture that would inhibit or prevent structuration processes.

***Lack of Senior Leadership Confidence***

Generally, employees perceived that management had a low degree of confidence in the value of digital analytics feedback and that digital analytics were not valued as part of the routine of decision making within the organization. To overcome this, participants felt it necessary to demonstrate that digital analytics allowed them to usefully capture the interests and expectations of external stakeholders, and that digital analytics translate findings into useful data. Employees used digital analytics to demonstrate to internal team members how feedback from external stakeholders indicate preferences. Unfortunately, this task was often performed in conjunction with other job functions so employees often utilized this feedback less than they would have liked given how integrated metrics and analytics are in their day-to-day routines. Sarah J. shared:

Although we had all these analytics and metrics available to us, because this data was not valued explicitly or implicitly by senior management, it often meant that I generated large amounts of content and was only able to take a cursory glance at comments on social media as a form of feedback.

This illustrates the way in which feedback was often a cursory part of day-to-day work. A lack of consensus regarding the utility of metrics and analytics on the part of managers meant that external feedback was underutilized. While an employee who communicates externally may value digital analytics as feedback, utilization, and integration may remain an obstacle if supervisory leadership doubts the value. However, when participants were able to successfully make their case in favor of digital analytics, leadership bought into a connection between external stakeholder digital behavior and analytics, leading to the possibility of advanced external communication campaigns. Mark P. explained:

While it was often annoying to go through the back-and-forth of proving *why* certain analytics mattered, sometimes, eventually, it did lead to changes on my team or with my boss. For example, I managed to convince my boss that the real sign that an email was effective wasn’t if the person read the email, but whether they clicked the link in the email, taking them to where we wanted them to go. From there, we started seeing everything as whether the person took action, which changed how we thought as a department.

As this quote highlights, the requirement of proving the value of feedback to routinize the behavior can be understood through the lens of adaptive structuration theory. For structuration to occur, organizational buy-in must also take place. For participants, it was frustrating that the organization would have a role that was not yet fully trusted and placed the onus on participants to prove value. This creates a structuration lag and inhibits feedback loops. Participants widely acknowledged that the labor of “executive buy-in” was necessary for digital analytics to be welcomed within the organization but took considerable time away from other job priorities. Ethan F. shared:

As a consultant, I am always starting fresh with clients, who may have varying degrees of comfort with digital analytics and knowledge about the connection between digital behavior and the success of their organization. If confidence is low, then I must spend a considerable amount of time, and client fees, building confidence before I can do what I was hired for.

In this way we can understand that confidence and organizational value of digital analytics is an aspect of integrating feedback into employees’ daily routines.

***Capacity as a Barrier to Feedback***

A lack of time and capacity in day-to-day work routines was a factor that affected both pre- and post-campaign evaluation of external stakeholders. Information overload emerged as a relevant factor impacting post-campaign evaluation. Leslie R. remarked:

Frankly, we don’t have the time and the resources to go, “Well why did that work? Because we’ve got another new product already and another new trade show and so we’re usually constantly chasing the shiny new toy.

This shows how time and bandwidth emerge as significant roadblocks in the day-to-day routines of employees regarding the integration of digital analytics feedback into the routine of the job. Employees knew there was benefit in learning about external stakeholders prior to a campaign, as well as understanding campaign metrics, but that was difficult given management expectations. When an external communication campaign was successful, employees faced time pressures to prioritize pre-determined key performance indicators for their role.

***Capacity and Day-to-Day Routines***

The firehose of information provided by ICTs created conditions under which participants were unable to proactively explore new digital feedback and relied on feedback that they had integrated into previous campaigns. Additionally, employees minimized data collection efforts because of constraints put in place by the organization structure (RQ3). Subordinates often felt the pressures of routinized behaviors in pursuit of familiar metrics, forgoing a long-term outlook. Finally, participants observed that although analysis could also include human-centered feedback such as interviews or focus groups, these practices were difficult to garner approval for within the structure of organizations. Pre-approved digital metrics, therefore, aligned with existing structures in organizations.

***Emphasis on the Status-Quo***

Employees expressed pressure to maintain perpetual production of external communication even when digital metrics suggested that more focused efforts may yield more effective results. Employees referred to “content churn,” occurring when communication efforts are launched in succession but not refined with feedback. Further, employees noted management would often downplay new digital data and show a tendency to champion traditional routines that prioritize volume while not stressing quality of results. This structure of hesitation, followed by the onus of additional external communication produced by the employee, inhibited new structuration and responsive iterations.

**Information Overload and Organizational Complexity**

 A central point for exploration was how employees were able to incorporate feedback into their work in complex organizational situations and in contexts of information overload. Findings from this study reveal that participants often found that the quantity of ICTs and the volume of digital analytics and metrics available meant that quick decisions had to be made about which metrics to highlight among departmental (Managers) and organizational (C-suite) decision-makers. Employees felt pressured to move from one task to the next, provide the same types of results and not spend additional analysis time, echoing industry findings of high turnover and burnout (Leiter, 2017).

 Employees attempted to circumvent these obstacles by focusing on the most critical metrics and crafting external communication in a way that enhanced the performance of that metric. In other words, a metric was selected that the participant felt best spoke to organizational goals and communication was designed accordingly. This created variance of opinion among participants as to whether to measure results based on perceived key metrics or to measure based on the metric most closely tied to organizational performance. A negative impact of this strategy is that it did not alleviate burnout or information overload within roles, and often forced employees to focus more on analytics and metrics to support future actions.

**Discussion**

This discussion distills findings to refine the impact in the context of adaptive structuration processes. As a qualitative study, this discussion aims to highlight the lived experiences of the participants.

**Feedback, Digital Analytics and Metrics, and Emerging Structures**

The first research question asked how employees integrate feedback into their work routine. As posited in the framework for AST, when advanced ICTs are used for communication purposes, those ICTs inherently bring with them social structures that “enable and constrain interaction” (DeSanctis & Poole, 1994, p.125). While some metrics are easy to measure (e.g., time-on-site, likes, replies) other metrics, such as sentiment and attitudes, are more difficult or impossible altogether to capture with ICT’s due to complexity. Recent work extends this notion to individual work, noting that flexibility and autonomy are important factors in enabling the development of new structures for adapting to and innovating with ICTs (Shao and Li, 2022). Because analytics are relatively easy to aggregate, these analytics enabled accelerated feedback loops and led to an increased pace of interaction and adoption in communication with external stakeholders. This was a double-edged sword, as what was gained in availability was simultaneously constrained because the feedback did not include the full nuance felt or intended by stakeholders. This mirrors recent work applying AST to mobile phone use in that there are spillover effects and additional consequences because of increased information availability (Wang et al., 2016).

In the face of accelerating feedback loops, participants adapted and created structures that sought to best utilize digital analytics data especially considering the dearth of qualitative forms of stakeholder feedback (e.g., interviews, focus groups). The analytics and metrics enabled by ICTs used in the external communication process represent what is described in AST as structural features (DeSanctis & Poole, 1994, p.126), or features inherent to the technologies, that impact the structuration. Employees adapted to the constraints of both their organization and the constraints of the features of the ICT feedback, while still attempting to structurate towards positive feedback loops. This structuration, and the interactions and modifications between not just humans who are communicating but also the technology facilitating the communication is what makes AST complex and adaptable in nature (Turner et al., 2019).

Participants shared the value of digital analytic feedback available in real-time (RQ2). AST posits that the structuration between key actors is often in flux and evolves as norms and expectations change. Digital metrics can be seen as a critical technological intermediary, in that the iterative feedback serves to enhance the external communication structures that exist (Madsen & Matusitz, 2022). However, while the ICTs provided real-time digital feedback data, the norms of employees’ day-to-day work with the data did not always align. For example, hourly metrics and digital analytics feedback was not always useful because the employee’s bandwidth was too constrained to allow meaningful response (RQ4). The creation of weekly or monthly routines that filter metrics represent structures of resistance to the speed of iteration that developed in working with digital analytics. Yet the speed of feedback, even with weekly or monthly routines, shaped the nature of routine tasks and led to a faster pace of iteration in ongoing efforts. These factors contributed to participants feeling that their external communication was facilitated by the ICT, but routines were established that limited the immediate impact of digital metrics and highlighted how these two structures impacted one another. This demonstrates that the increased pace of feedback created tension at the employee level and, as a result, employees worked to subvert and negotiate new work structures. Additionally, this real-time feedback and speed of iteration, as well as the ways that participants attempted to work around or utilize the endless flow of information speaks to research on AST in health technology contexts, wherein healthcare workers were similarly inundated (Barrett, 2018).

**Manipulating Digital Analytic Feedback Value Within an Organization**

The third research question explored obstacles to integrating digital analytics feedback into workflow and participants shared how senior leaders’ framing of digital analytics impacts perceptions of feedback across their organizations. Participants pointed out that data are valued in relation to the established routines of a given organization. For example, if the organization has prioritized online form completion by their target audience, decision-makers may hyper-focus on that one metric while forgoing others that contribute to the behavior. This speaks to AST in the constraint of the social norms within the organizational and employee practice (DeSanctis & Poole, 1994), which may subsequently further constrain as well as modify the give and take of feedback between stakeholder and organization.

Layered perceptions of digital analytics as feedback further illustrate the process of signification as part of adaptive structuration, wherein employees attempt to understand the intentions of communication received from stakeholders by first understanding the meanings embedded within the technology (DeSanctis & Poole, 1994, p.126). Employees as intermediaries adds another layer of complexity, understanding, and meaning-making that can impact feedback. For example, the employee managing external organizational communication finds themselves as the interlocutor between the external stakeholder and organizational leadership (RQ3). While the intention may be to iterate and adapt in ways that lead to structuration for the benefit of all parties, the tension of satisfying everyone as well as grasping the technological structures of each digital platform renders the process more difficult.

Participants shared that the most valued data within organizations were revenue-related, and thus one obstacle of feedback that was unrelated to revenue streams is that it was often undervalued (RQ3). For this reason, employees measuring external communication efforts prioritized leadership-preferred metrics in their reporting to remain aligned with those within the organization. Choosing one source of feedback over another speaks to how actors appropriate metrics in unforeseen and unintended ways; the structures established utilize metrics for a political purpose within the organization as opposed to the designed use of measuring the effectiveness of a communication. The findings show clear evidence that employees manipulate the interpretation of metrics to construct a narrative advantageous to the individual as an actor within the organization.

Additionally, employee reliance upon digital analytics feedback was unavoidable, particularly as they expressed need to justify and legitimize communication practice as a function of job role (RQ2, RQ3). For work to be viewed as legitimate employees need to be sure that the composition of their job role is clearly understood by their managers, which means communicating the deliverables and information most pressing to those around them, relegating the audience to second priority. This served as another obstacle to both legitimize feedback for themselves and the organization and integrating feedback in the context of day-to-day work (RQ1, RQ2, RQ3)

**Balancing Multiple Audiences**

Theoretically, this phenomenon can be understood through AST’s spirit of technology (DeSanctis & Poole, 1994) which is reflected in understanding how employees utilize metrics to serve different goals. The use of the ICTs inherently privileges members of a particular group, those that hold decision-making power. And in doing so, supervisory priorities impact the experience of the technology for both the implementing employee and the external stakeholder, because the technology is being used in accordance with the preferences of leadership. Leaders have responsibility for setting the goal of employee activity, and thus directly influence the type of digital analytics feedback valued (RQ2). This relates to the spirit of the technology in how creators of ICTs design analytics and metrics to be available specifically for organizational use.

**Obstacles, Pressures, and Inhibitors of the Adaptive Structuration Process**

Additional obstacles may inhibit adaptive structuration in the context of employees who communicate externally and use digital analytics as feedback (RQ3). Once the complexities of employees who communicate externally are fully understood as well as the value of that communication is clearly communicated within the organization, we see that these complexities are overlaid further with additional variables and challenges stemming from culture, ICTs, and the job role itself. By trying to please both leaders and external audiences, employees who communicate externally grapple with a lack of time, an overabundance of data (RQ4), a discrepancy of participant and senior leadership confidence in the value of some forms of digital analytics feedback, and pressure to be constantly producing (RQ3).

While it is common for modern employees to be expected to over-deliver and constantly prove their output capabilities (Vagg & Spielberger,1998), this is not always occurring in tandem with emerging communication practice. Because data analytics are still finding value within organizations, employees must advocate for both their work and its value simultaneously and continue to produce at a rapid pace (RQ3).

**Complex Situations and Information Overload**

 The abundance of ICTs and their data means that employees do not have the luxury of utilizing all feedback from their stakeholders (RQ1, RQ3), resulting in quick decisions being made to capture results and move forward with a heavy workload. When quick decisions are made repeatedly, routines are more likely to occur to prioritize efficiency. Unfortunately, once a digital analytics data metric is perceived as a specific type of stakeholder feedback, it may be perceived that way regardless of the nature of the interaction (RQ3). If deeper analysis is not conducted due to time constraints or other limitations, miscommunication may occur repeatedly.

From an AST perspective, the perception of a digital analytics metric as feedback suggests that the spirit (DeSanctis & Poole, 1994) or essence of the technology’s role and understanding the intent of the external stakeholders using the technologies may be altered. When external stakeholders provide feedback, either through implied digital behavior or explicit feedback, they may expect the recipients of their feedback to iterate or adapt as a result. When feedback is barely analyzed or analyzed too quickly because of time constraints (RQ3), the adaptation may not occur or occur so slowly that external stakeholders become frustrated or disinterested in the exchange. When this is overlapped with additional job functions as well as an avalanche of digital analytics feedback available in real-time, it is easy to see how this situation can foster burnout and information overload.

**Conclusion**

This work points details the structuration processes that occur between employees and their external stakeholders, and the ways in which those processes are inhibited, limited, or changed because of organizational factors and the normalization and reliance upon ICTs for communication. Our findings provide a basis for understanding how communication and iteration through technology may be impacted depending on factors such as time, norms, and volume based on information produced through feedback loops. As such, a key contribution of this work is the explication of the role of feedback loops, and the continuing importance of adaptive structuration processes for understanding the use of new ICTs in the workplace.

**Limitations**

This study is inherently limited in that it assumes that the employee is seeking to better understand an external organizational communication process. The findings from this research are unlikely to carry through to purely internal communication processes as the stakeholder dynamics are quite different. This study is also limited in that it explores one specific type of organizational communication process. More work is needed to explore the nuances of the ways in which digital metrics are impacting organizational routines and expanded qualitative research as well and quantitative work such as employee surveys could help to expand this research.

**Practical Implications**

According to Harvard Business Review (Waller, 2020), modern organizations aspire to embody a work culture that celebrates data-driven decision making. However, there are obstacles to the development of this type of culture that reaches beyond hiring employees who understand and use analytics data as part of their day-to-day routine. This research highlights that there are day-to-day challenges integrating large amounts of digital analytics feedback into the workflow or communication process with external stakeholders. This is compounded by a lack of executive buy-in, at times, to the value of the feedback. Often technology purchasing decisions are made at the executive level, but there is little internal communication feedback from those expected to use the software. As this work centers the experience of those employees, organizations should also solicit feedback from employees in terms of challenges faced in day-to-day work, constraints integrating feedback meaningfully, and to better marry priorities of the organization’s decision-makers with the routines of those engaged in the work. In this way, this research suggests an internal feedback loop, wherein decision-makers and external communicators using digital tools meet and discuss the viability and usefulness of analytics solutions semi-regularly and to insure alignment with outcomes.

**Future Research**

 Future research should examine the relationships between the factors (e.g., time, organizational support, perceptions of stakeholder understanding) suggested to limit AST provided in this study. For instance, future research could examine the extent to which organizational support of feedback analysis plays a role in the amount of time allotted for employees to understand external stakeholders both before and after ICT-based communication has occurred. Future studies of this nature may incorporate organizational literature on leadership and trust and explore how allowing specialized employees to fully utilize their skill set may prove a fruitful strategic management effort.

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**Table 1**

*Interview Participants*

|  |  |  |  |
| --- | --- | --- | --- |
| ID | Seniority | Department | Market Sector |
| 1 | Executive | Marketing | Software |
| 2 | Mid-Level | Marketing | Healthcare |
| 3 | Mid-Level | Analytics | Wellness |
| 4 | Senior | Demand Generation | Entertainment |
| 5 | Senior | Marketing | Agency |
| 6 | Senior | Marketing | Consulting |
| 7 | Mid-level | Communication | Agency |
| 8 | Executive | Marketing | Pharmaceutical |
| 9 | Senior | Marketing | Sporting Goods |
| 10 | Senior | Marketing | Consumer Packaged Goods |
| 11 | Mid-Level | Public Relations | Consumer Packaged Goods |
| 12 | Senior | Marketing | Pharmaceutical |
| 13 | Mid-Level | Marketing | Healthcare |
| 14 | Executive | Demand Generation | Software |
| 15 | Senior | Marketing | Software |
| 16 | Mid-Level | Marketing | Consulting |
| 17 | Mid-Level | Marketing | Consulting |
| 18 | Mid-Level | Marketing | Sporting Goods |

**Figure 1**

*Salesforce dashboard displaying a variety of digital analytics gathered by the platform.*



1. The backend or user dashboard refers to a subsection of a given ICT interface that a user is able to sign in to and is then able to access user-specific data and measures. The back-end dashboard is the area in which the communication professional will have access to audience-related information such as online user behavior.

2 Website visits (when a user visits a web property), time-on-site (how long a user spent on the web property in seconds/minutes), pages per visit (how many individual URL’s a user visited when visiting one web property), and bounce rate (the percentage of visitors to a particular website who navigate away from the site after viewing only one page) are commonly used digital metrics in which external communicators may evaluate the success or engagement with stakeholders. [↑](#footnote-ref-1)
2. Pseudonyms of participants used throughout [↑](#footnote-ref-2)