

# Digital Feedback for Digital Work? Affordances and Constraints of a Feedback App at InsurCorp

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**Abstract.** Little is known about how digital work shapes the exchange of performance feedback, even though today's digital and global world demands for more continuous feedback than annual reviews. This research investigates a feedback app in a naturalistic context within a globally leading financial service corporation (InsurCorp). Drawing on malleability and voluntary participation, the app offers possibilities to send and request feedback between employees. Rich contextual insights from a multinational pilot study with 568 users are gained by triangulating qualitative data from 21 semi-structured interviews and 69 feedback app user reviews with usage data. Anchored in the theory of affordances, we provide insights on use practices and find that the app affords operational-level feedback exchange on specific subjects, while general feedback on sensitive topics is preferably exchanged in person. To understand actualization facilitators and barriers, we take a social-technical systems perspective to elaborate contextual factors that influence the individual's actualization decision.

**Keywords:** Performance Feedback, Digital Work, Affordance Theory.

## 1 Introduction

Exchanging performance-related feedback on work is key to ensure individual and organizational progress [1, 2]. Scholars and practitioners agree that the ongoing digitalization is changing the nature of work [3–5]. Accordingly, the question arises how the rise of digital work is shaping the exchange of performance feedback [3, 4, 6].

First, traditional performance management processes such as once-a-year goal settings, performance reviews and 360-degree feedback are losing their appropriateness for the twenty-first century. They are typically long, lack in visible outcomes and are less valuable than conversations that take place in the moment of performance [7, 8]. Accordingly, besides assessing the performance from a retro-perspective, there is a shift towards individualized real-time feedback that guides future action and facilitates improvement, training and development [8, 9]. Second, in today's digital and globalized world, virtual, distributed and remote work settings demand for digital work tools [10, 11]. In fact, the majority of knowledge workers relies on digital technologies

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[3, 4, 6], e.g., 83 percent of employees in Germany use digital technologies at work [12]. Accordingly, novel digital technologies not only offer opportunities for knowledge workers to perform work, but also to exchange feedback [8].

Prior research shows how motivation and productivity can be improved through altering the likelihood of receiving feedback [13], providing computer-generated feedback [14–16], providing real-time feedback on specific behavior [17], and embedding feedback features into task-specific collaboration environments [18]. However, there is a lack of research that investigates novel digital work tools dedicated to facilitating performance feedback exchange between employees. Accordingly, calls for research emphasize the need to examine the use of technology for performance management [8] and to investigate digital work tools that support knowledge workers in their digital work environments [3, 11].

Against this backdrop, we adopt a case study research strategy to investigate a digital feedback app and its use in the context of a pilot project in a naturalistic workplace setting at the global financial service provider InsurCorp. While the action possibilities offered by the feedback app may be perceived as enabling as well as inhibiting to employees (i.e., perception of affordances and constraints), employees continuously decide how to realize value from using the app (i.e., actualization). Therefore, we pose the following research question: *How is the perception and actualization of affordances and constraints from feedback apps affected by employees' individual use practices and organizational context factors?*

To do so, we apply a sociomaterial perspective to adopt “a relational middle ground between technological determinism and social constructivism” [19, p.2].

## 2 Theoretical Background

### 2.1 Performance Feedback in the Context of Digital Work

Sending and receiving feedback has become a key activity of knowledge workers to exchange information that relates to their performance and understanding [20, 21].

**Traditional Performance Feedback.** In this research, we focus on a particular form of feedback, that is, performance feedback. Drawing on prior research, we consider performance feedback as “dynamic communication process occurring between two individuals that convey information regarding the receiver’s performance in the accomplishment of work-related tasks” [1, p.260]. Thereby, literature distinguishes formal and informal feedback. The former denotes official and top-down enforced events (e.g., yearly goal setting, performance appraisal and 360-degree reviews) [9], whereas the latter describes feedback events that take place independent of formal mechanisms during day-to-day work [22]. Opposed to formal events, informal events often have the advantage of being more timely and contingent on the situation of performance [1, 22]. This is important, because effective feedback is said to be timely (e.g., reducing feedback cycles), specific (e.g., related to a specific event/subject), relevant for the performer (e.g., enabling to request feedback), accurate, and easy to understand [23]. Accordingly, work usually involves both formal and informal feedback exchange through feedback seeking and giving [22].

**Digital Work Context.** Work is increasingly characterized as digital work, i.e., “[an] effort to create digital goods or that makes substantial use of digital tools” [6, p.283]. Consequently, the possibilities to assess performance and exchange feedback digitally are rising. On the one hand, the work of blue-collar as well as white-collar workers can be recorded and analyzed [14]. This enables the provisioning of computer-generated feedback, which is often preferred and more trusted by employees as it directs employees' attention to the task leading to higher performance [14–16]. Similarly, the availability of performance information enables the provision of real-time feedback while engaging in a particular behavior, thereby reducing salience bias and causing greater behavioral shifts than aggregated feedback [17]. In fact, changing the likelihood of receiving feedback improves productivity [13]. On the other hand, and aside from computer-generated feedback, feedback exchange between employees occurs digitally, i.e., computer-mediated feedback [15]. Rather than on platform-based digital work tools with embedded task-specific feedback mechanisms [11, 18], we focus on digital work tools that offer possibilities for employees to provide and seek feedback [7, 8, 24]. This is particularly relevant for understanding others' subjective judgments, e.g., for managers to assess their effectiveness [10]. A particular type of instantiation of such work tools are feedback apps, e.g., used by Amazon, Deloitte, GE, and IBM [7, 24].

**Feedback App.** We regard feedback apps as *digital work tools dedicated to providing employees with possibilities to exchange feedback in their day-to-day work* [8]. Similarly, social software creates interaction potentials for employees to exchange information [25, 26]. Conceptualizing feedback apps as social software emphasizes two key characteristics that inform our research. First, it is malleable and flexible, and hence, open to various yet unforeseen use contexts [27, 28]. In fact, malleability and flexibility are crucial for digital work design, because “human workers have individual, diverging, and continuously changing needs” according which digital solutions need to be adopted [3, p.2]. Second, it relies on voluntary participation and emphasizes bottom-up engagement instead of top down enforcement [29].

## 2.2 A Sociomaterial Perspective

Digital artifacts such as feedback apps entail forms of physical and digital materiality, which are relevant to users and endure across time and place [30]. However, to obtain meaning and effects from technological structures requires their enrollment in practices embedded in institutional contexts [31], e.g., in shared routines and hierarchies [28, 30]. Even though structure may endure across some time and place, neither technological nor social structures are fully stabilized and can change [28]. In fact, they are interdependent in that “(1) all materiality is social in that it was created through social processes and it is interpreted and used in social contexts and (2) that all social action is possible because of some materiality” [30, p.10]. A sociomaterial perspective acknowledges this interdependency by adopts a relational perspective.

**Theory of Affordances as Theoretical Lens.** Grounding this research in the affordance theory puts the emphasis on the perceived possibilities that objects offer to humans in a certain context [32]. Proposed in the domain of ecological psychology, the theory is widely adopted in IS research [19, 33, 34]. Its relational nature proves to be

useful as it theorizes both, the human and the technical aspects of IS. This guides our research to mutually investigate the properties of the IT artifact (i.e., a feedback app), and the goals and capabilities of the users (i.e., employees within InsurCorp). Thereby, three conceptual distinctions shape the present research: *affordance emergence, perception and actualization* [19]. First, *affordance emergence* describes goal-oriented action potentials that arise from the relation between a specified user and a specific IT artifact [34]. Affordances are real so that – in our case - the possibility to request feedback with an app exists whether or not a user perceives or exploits it [32]. Second, *affordance perception* represents the recognition of action potentials. They may or may not be (mis-)perceived by a user. Both depends on factors such as available information [35]. Action possibilities offered by an IT artifact are not always enabling but may also be constraining depending on the user's goals and capabilities [28, 36]. This may trigger changes in technologies or in routines, which in turn, may lead to changed perceptions of affordances and constraints [28]. For instance, the same artifact that once was perceived as enabling by a user, may suddenly be perceived as constraining, because the goals have changed, or the use of the IT artifact showed that the goals cannot be achieved [28]. Third, *affordance actualization* describes the realization of actions potentials which, in turn, leads to effects. Technology simultaneously liberates and controls human action and is, thus, both constraining and affording to a certain extent; what dominates not only depends on the user, but also on the institutional context in which the user is situated and the technology is embedded [36]. Consequently, not only the emergence and perception, but also the actualization decision varies across contexts and depends on factors such as expected outcomes and perceived efforts required [35]. An artifact may provide employees with possibilities to fulfill their goals and they may perceive them, however, still they may decide to not actualize them. Employees compare affordances of artifacts with similar affordances, which other artifacts offer [37]. Hence, the actualization of affordances by individual employees not only depends on their goals and the artifact's materiality, but also on the organizational context in which an employee is situated and performs its daily work [30, 31, 33, 35–39].

**Actualization as Socio-Technical Phenomena.** Prior research relies on socio-technical systems (STS) theory to elaborate the sociotechnical conditions of affordance emergence and perception [40] as well as organizational changes required to actualize organizational-level affordances [41]. Both, the investigated feedback app artifact and employees are embedded in an organizational work context. Accordingly, we draw on STS theory [42, 43] and build on prior work [41, 44] to inform our investigation of the actualization process, because the alignment of the four STS components facilitates technology use, while gaps in alignment impede technology use [44]. STS theory understands organizations as systems of actors, structures, tasks, and technologies [42, 43]. Specifically, actors comprise people with qualifications [43]. Structures refer to systems of communication, authority, and work flow [43]. Tasks represent the “raison d’être: the production of goods and services, including the large numbers of different but operationally meaningful subtasks” [43, p.1144]. At last, technologies describe available means for problem-solving such as computers [43]. In summary, studying the actualization of affordances at individual level requires a broad recognition of the socio-technical context that may stimulate the actualization in various ways [39].

### 3 Research Design

#### 3.1 Case Setting

Striving to contribute towards theory development on performance feedback in the context of digital work, we inductively gain rich empirical data [45, 46] from a case study to investigate the phenomenon of interest in its real-world context [47]. Namely, a pilot project introducing a feedback app into a global financial services corporation.

**Social Setting.** The pilot comprises 568 participants situated in a naturalistic work environment at InsurCorp, which employs between 100 and 150 thousand employees and operates globally in the fields of insurance and asset management. There are three key stakeholders. First, InsurCorp’s technology provider in Germany runs the pilot and has the vision to transform InsurCorp into a digital group. Second, the global human resources (HR) entity finances the pilot. Accordingly, the project team consists of a project manager, a product owner, and an intern of the first two stakeholders. Third, different operational entities introduce the app. The recruitment process started by consciously selecting entities based on location and specialization. InsurCorp Germany, France and Morocco were selected as national companies running the core business. InsurCorp Technology in Germany and Singapore were selected to include technology-oriented companies. Investment Management, Communication and Corporate Responsibility, and Global HR were selected due to their international orientation. Next, the HR responsible of each entity invited employees to participate on a voluntary basis considering both executives and non-executives as well as males and females from various job roles and departments.

**Technological Setting.** The introduced artifact is a customized app dedicated to the exchange of feedback (see Figure 1). It has two main features: sending and requesting written feedback or points. Each feedback must follow the structure “I like, I wish” and is non-anonymous. All personal feedbacks are listed in an inbox and the app shows a ranking based on the quantity of exchanged feedbacks. The app is not available in the company app store but is a separate mobile web app accessible via URL. However, it is accessible from everywhere. Due to works council agreements and the limited number of licenses, registration is compulsory and follows a manual workflow.



Figure 1. Screenshots of the feedback app on a mobile (left) and desktop (right) device.

### 3.2 Data Collection and Analysis

**Data Collection.** We obtained in-depth qualitative data from four sources of evidence and quantitative usage data from one additional source (Table 1) [47]. This suits well to address the sociomaterial and contextual research questions and given the restrictions of the works council. Similar to the recruitment of pilot participants, the interviewee recruitment process started by seeking names of pilot users from the HR responsible person of the individual entities. The goal was to cover executives and non-executives as well as heavy and light users (that used the app at least once) from various functional and cultural backgrounds (see Table 1 and Table 2). To further disclose the interview process, all interviews were conducted either in German or English depending on the native tongue of the interviewee to increase the expressiveness of their statements. The interview guide follows well-established guidelines [48] and is grounded in the affordance theory. We started with questions to get to know the interviewees. Next, we focused on daily routines and work practices, since they “often oppose top-down specified production processes, and studying these processes creates a deeper understanding of individual needs” [3, p.4]. Accordingly, we continued with open-ended questions to prompt how and why the feedback app is used (or not) in everyday work. Further questions probed action possibilities and constraints as well as how these perceptions are influenced by the organizational context. Then, we shifted from today’s use to changes over time and future use potentials. The interview guide was discussed within the project team and pre-tested in the first two interviews by analyzing the data and by requesting feedback using the app. The interviewees assessed the process with 4.5 out of 5 stars: “I liked the questionnaire as it allowed for some deeper evaluation of the use and potential of the tool. I think this is the correct way to collect feedback about the app at this stage. You also managed to create a pleasant trustful atmosphere which makes it easy to speak openly”.

**Table 1.** Multiple sources of evidence

<i>Data source</i>	<i>List of details and descriptive statistics</i>
1. Qualitative semi-structured interviews	21 interviews with pilot participants (#1 to #21); 62% females / 38% males; 47.7% heavy users / 52.3% light users; 38% executives / 62% non-executives; Jul.-Dec. 2017; between 18 and 51 min. transcribed recordings.
2. Feedback app user reviews	69 reviews as answers to feedback requests using the feedback app (#FR); Aug. 2017 to Dec. 2017; 48% females / 52% males; avg. of 119 characters “I like” & 145 characters “I wish” statements; avg. of 3.82 of 5 stars.
3. Status meetings	Weekly WebEx calls within the project team; from Jul. 2017 to Mar. 2018; between 30 and 60 minutes.
4. Verification of results within InsurCorp	Discussion of results with the project team (face-to-face and WebEx), the manager responsible for people sourcing and development (face-to-face), the OE managers (WebEx), and with InsurCorp consulting (WebEx).
5. Quantitative usage data	Usage data (e.g., number of sessions, number of exchanged feedbacks, distribution of feedback ratings); Restricted by the works council to aggregated and transactional data (i.e., no feedback content).

**Data Analysis.** Following guidelines for qualitative research [46, 47, 49], data was iteratively collected and analyzed until a coherent picture emerged. We triangulated our sources of evidence in MAXQDA 12 [47] by adopting open, axial and selective coding [46]. The unit of analysis are individual employees within their organizational context, thus, analyzing individual affordances and constraints, while applying replication logic across operational entities [47]. During open coding, codes were assigned inductively to condense the transcripts. Our axial coding procedure was based on the theoretical lens to code (1) properties of the app, (2) properties of pilot users (i.e., goals, capabilities and context), and (3) (mis-)perceived and (non-)actualized affordances as well as constraints. During selective coding, we sharpened the connections between the affordances and constraints as well as the relations of the organizational context to the emerge-perception-actualization process. Drawing on related research [30, 40, 41], we extended the coding structure with the dimensions of socio-technical systems [42, 43] to elaborate factors of the organizational context in which an individual is situated.

Then, we triangulated our qualitative insights with quantitative data. First, over six months, 6,2% of users engaged in 26 to 50 sessions, while 45,9% of users only had one session. Second, feedback exchange decreased over time. Given the first month is 100%, the number of exchanged feedbacks decreased in the subsequent months: 65%, 23%, 22%, 5% and 4%. Third, the distribution of ratings associated with feedback is as follows: 5 stars (58%), 4 stars (33%), 3 stars (6%) 2 stars (2%), 1 star (1%).

**Table 2.** Characteristics and number of interview partners per operational entity and location

<i>Entities</i>	<i>Locations</i>	<i>Job roles (interview duration and type)</i>
Technology Provider (6)	Germany (2), Singapore (4)	#1 Head of Central Function Platforms (34 min, f2f) #11 Intern (37min, phone) #6 Human Resources Services (18min, phone) #7 Asia Core Systems (46min, phone) #8 Asia Core Systems (39min, phone) #14 Head of Tech. Prov. Singapore (27min, phone)
Investment Management Alpha (4)	Germany (3), Hong Kong (1)	#2 Employee Experience (51min, f2f) #3 HR Systems Consultant (47min, f2f) #4 Head of HR Digital (45min, phone) #5 HR Solutions Specialist (14 min, phone)
Investment Management Beta (3)	Germany (3)	#9 Head of Fixed Income (27min, phone) #19 Chief Investment Officer (37min, f2f) #21 Asset Liability Manager (49min, phone)
Global HR (2)	Germany (2)	#10 Processes - HR Transformation (23min, phone) #20 Head of People Sourcing & Dev. (38min, phone)
Insurance Morocco (3)	Morocco (3)	#12 Head of Dev. & Engagement (36 min, phone), #13 Portfolio Manager (28min, phone) #15 Audit Intern (RB, 25min, phone)
Communication (3)	Germany (3)	#16 Jun. Communication Manager (26min, phone) #17 Internal Communications Officer (35min, f2f) #18 Project Manager (40min, f2f)

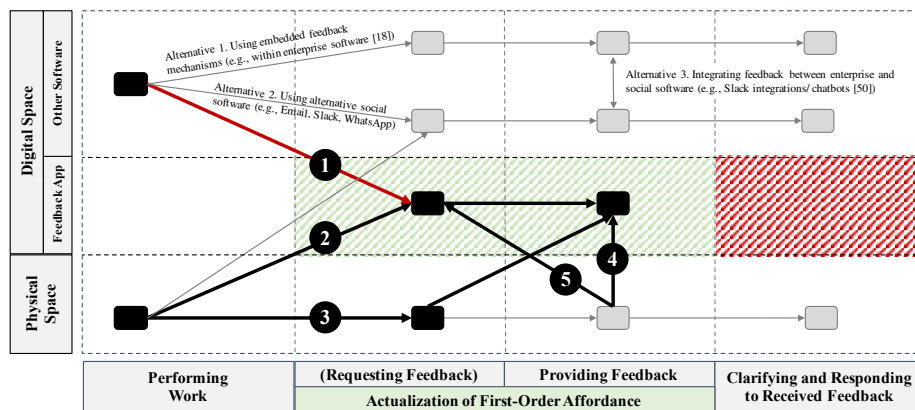
## 4 Results

### 4.1 Affordances and Constraints of the Feedback App

Due to its malleability, the feedback app is open for wide variety of feedback. In practice, however, we identify common use practices in the form of four use scenarios and five use trajectories that explain how employees perceive and actualize the feedback app as a digital work tool to exchange feedback on concrete and operational activities, i.e. the first-order affordance.

**Use Scenarios.** First, the feedback app is used for *onetime activities*. For example, “I saw a presentation that I found particularly good, then I tried the app” (#7). Furthermore, the app was used to request feedback after meetings: “We did a lot of stuff around, we had a team offsite, I asked them [the participants] for their opinion on that.” (#2). Aside from group meetings, the app is used for one-on-one meetings: “I simply sent the people a request to give feedback or after giving a presentation to my boss” (#7). Second, use scenarios include *recurring activities*. For example, “we have a weekly call for [team name]. So, I asked ‘how do you like the weekly call?’ [and] ‘is it useful at all?’” (#3). Third, feedback is exchanged upon *phase changes* such as delivering projects, completing milestones, or finishing the first week at work. For instance, “when we delivered a project, then, of the four or five people working together, I would give some feedback to each of them” (#2). Fourth, the app is used to acknowledge *desired behavior*. “When something has been quite amazing, [...], you say ‘that was good. that's quite nice’. You just want to give a little pat on the back.” (#17). Lastly, it was used to say thanks, e.g., “[to my manager for being] very calm and supportive and really helping me to be constructive” (#2).

**Use Trajectories.** Our results reveal how employees take up five trajectories of use. The first two use scenarios are rather typical (cf., Path 1-2 in Figure 2), while the three additional trajectories show how employees continuously navigate between physical and digital spaces to perform work and exchange feedback (cf., Path 3-5 in Figure 2).

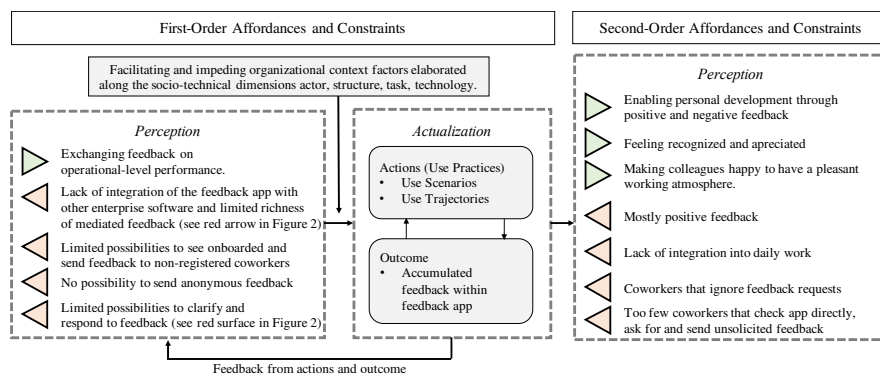


**Figure 2.** Trajectories (black) of actualization (green), alternatives (gray) and constraints (red)



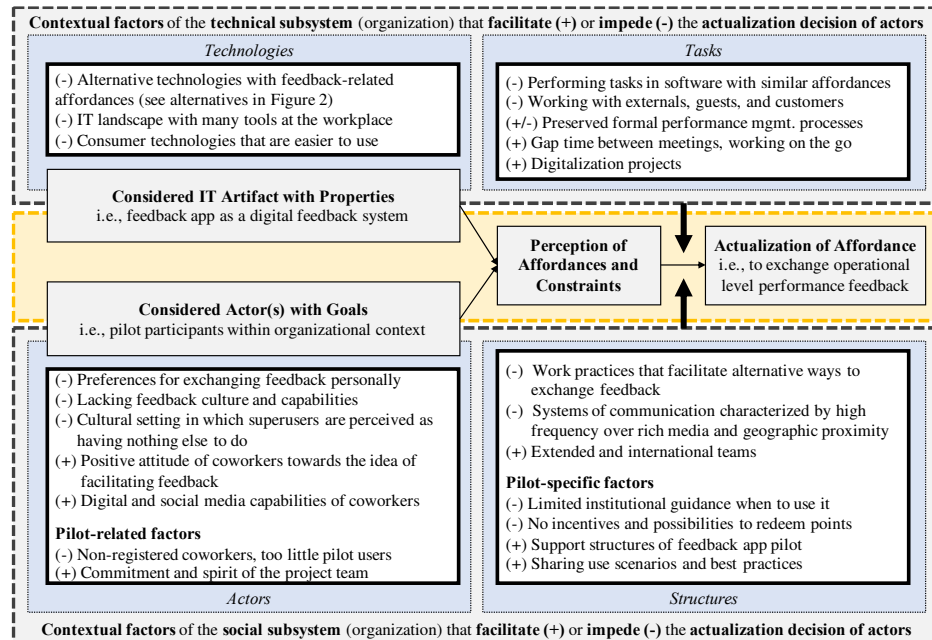
*First*, employees exchange feedback on digitally performed work (e.g., a WebEx call). *Second*, the app is used for offline performed work (e.g., presentations) by either requesting feedback from colleagues or providing unsolicited feedback. *Third*, employees refer to the feedback app in conversations: “I don’t think I have done it [i.e., requesting feedback] by sending it from the app, but I rather asked them directly. More when we are in the dialogue... like you put in an additional sentence... is there any feedback feel free to use the feedback app” (#2). Accordingly, the app is not used until a colleague decides to actually send feedback. *Fourth*, even if feedback is exchanged in person, additional feedback may be exchanged afterwards. For instance, “yesterday we had a meeting with all the team leaders and there were some who had a comment or an idea after the meeting, [...], you can do that via the feedback app.” (#1). *Fifth*, employees assess if they make progress on the feedback they received in person: “I had received feedback in different one-on-one discussions that I was trying to action, [...], and so I asked some of them if I was moving the needle at all on that.” (#3).

**First-order Constraints.** *First*, constraints emerged from lacking integrations of the feedback app with other enterprise software (e.g., WebEx, Outlook). Employees perceived high media change efforts compared to alternative means to exchange feedback (see Figure 2), while the richness of the mediated feedback was limiting for some employees: “Can the app record snippets of a WebEx presentation?” (#FR). *Second*, employees perceived constraints from the limited possibilities to see who is registered and the impossibility to send feedback to non-registered co-worker. One employee explained: “I haven’t used the app very much so far, since it is not very transparent who of my colleagues has signed up for the pilot phase” (#FR). It was argued that “if we could send feedback to someone that is not registered, it would push him/her to register” (#FR). *Third*, some employees expected to send anonymous feedback: “I thought this was anonymous and it doesn’t seem like it is and that’s a deal breaker.” (#17). *Fourth*, employees perceived constraints in clarifying and responding to feedback (see the red rectangle in Figure 2): “I would actually like to have more of an interaction on the feedback that I give... like a feedback on the feedback I’m giving... or [...] that I’m receiving. [...]. And when I receive a feedback where there is something positive and there is something constructive for improvement... then [...] I want to answer to that” (#2).



**Figure 3.** First-order and second-order affordances (green) and constraints (red)

**Second-order Affordances and Constraints.** Actualizing the first-order affordance to exchange operational-level performance feedback enables the emergence of second-order affordances and constraints (see Figure 3). Given the accumulated operational-level feedback as outcome of the first-order affordance, employees see potentials for personal development by identifying weaknesses and strengths through positive and negative feedback: “it can actually give me more stuff to work on. To see what are my weaknesses and my strengths and how to improve overall“ (#FR). As such, the app serves as “feedback account” to collect feedback in one place. In turn, constraints emerge from the way coworkers actualize the first-order affordance. Most notably, employees mention an emphasis on positive feedback: “Using the app, I realized most feedback remains personal and the app will be biased to only positive comments” (#FR). This is consistent with the rather high star rankings associated with the feedback. Interestingly, only some employees find this constraining, while others are satisfied and compare it to social media: “I do not write on anyone's Facebook wall ‘I dislike your beach picture’. [...] You can tell if your contributions are good in that if you get likes for it, it's probably good [..., and otherwise] it was probably only average” (#21). However, employees consistently reported to feel happy and recognized when they received feedback: “It's a simple thing but receiving points or positive feedback really makes your day even better” (#FR). And sending feedback enables employees to maintain a pleasant working atmosphere that fosters motivation and a feeling of belonging together: “it just makes people feel good when you make them happy, and then it is more pleasant to work together” (#1).



**Figure 4.** Facilitating and inhibiting context factors of the technical and social subsystem

## 4.2 Socio-Technical Context Factors that Facilitate and Impede Actualization

Still, employees may or may not realize the perceived possibilities to exchange feedback. In fact, the number of exchanged feedbacks decreased over time. Our results suggest that understanding individual's actualization decision requires considering their sociotechnical context, which comprises facilitating (+) and impeding (-) factors.

**Technical Subsystem.** The feedback app is part of a larger technical subsystem. Employees use it in the context of other technologies at work. A fragmented IT landscape with too many tools impedes actualization: "I wish NOT to work with an additional tool" (#FR). This goes along with alternative technologies that offer similar affordances, e.g., an employee stated that "for me it's actually equivalent to email. But not much better" (#9). Comparisons also include consumer technologies: "when you WhatsApp call people and it appears 'rate the quality of your call', you just click a star and then it [the feedback on the call] goes away" (#17). The technological context, in turn, goes along with the task environment. Performing tasks in software that offers feedback-related affordances inhibits employees' willingness to exchange operational-level performance feedback with the feedback app (see alternatives in Figure 2). Furthermore, working with externals, guests and customers is an inhibiting factor. For example, an auditor points out: "I used it only once, because I wasn't in the company. I am doing inspections, so I go around Morocco" (#15). Consequently, individuals expressed their need to "use it with guests/customers, because this feedback counts the most" (#7). Embedding the pilot in a task environment in which formal performance management processes are preserved was perceived as facilitating and inhibiting. On the one hand, it is additional work: "I would find it ideal if the feedback app is developed so that it replaces the 360-degree feedback. [...] I cannot have five different processes" (#9). On the other hand, employees argued for keeping it separate from the formal processes to keep it casual, fun and engaging as well as prevent dishonest use. Further observations include facilitating factors, e.g., when working "on-the-go or if you have gap time between meetings" (#1). It was emphasized that the app "should necessarily be seen together with other digitalization topics that we are talking about here at [organizational entity], for example digital e-learning" (#21). In such contexts, people's efforts need to be recognized and incentivized to bring projects forward.

**Social Subsystem.** Employees are part of a wider social subsystem. We find work practices that facilitate alternative ways to exchange feedback and inhibit the need to use the feedback app. For example, closing meetings with face-to-face feedback rounds was mentioned as "ending ritual of meetings" (#1). Thus, limiting actualization to situations in which additional feedback is provided afterwards (see Path 4 in Figure 2). Also, daily Scrum stand-up meetings offer an alternative to exchange timely feedback. Further, working frequently with coworkers over rich media is identified as inhibiting, while extended and international team structures are facilitators: "of course I use it a lot more when I'm in [inter-regional meeting]. [...] They come in, present, go out, and fly back to Paris, Milano, and so on [...] then you write that together in the evening, on your way home, if you sit on the train" (#19). This is increasingly relevant, because „when we are developing into [the direction of] virtual teams with less rigid hierarchies and work with different teams across projects, we just need it" (#21). In addition to

prevailing structures, the pilot project entails inhibiting and facilitating context factors. For example, collecting feedback and points without incentives and possibilities to redeem these points was mentioned as inhibiting factor together with limited institutional guidance when to use the app: “I wish to have more guidance on when to give feedback. [..., and on] how to understand the feedback app vs 360/ multi rater vs other regular feedback” (#FR). Sharing identified use scenarios and best practices was perceived to mitigate this factor. Also, actor-related context factors of the pilot further inhibited the actualization. Many users were surrounded by non-registered coworkers, and hence, felt that there are too little pilot users: “as the group is small, it's hard to not be too repetitive and/or biased towards the group who participates” (#FR). Further, being surrounded by actors that prefer to exchange feedback personally limits its usefulness. While general feedback on sensitive and controversial topics was preferably exchanged in person, employees’ preferences varied for concrete and operational-level feedback. Coworkers with a positive attitude towards the idea of facilitating feedback and digital and social media capabilities foster the actualization.

## 5 Discussion and Conclusions

### 5.1 Discussion of Implications

**Implications for Theory on Digital Work, Social Software, and Feedback.** We address calls for research on digital work [3, 11] by elaborating how employees in digital work environments still navigate back and forth between various digital and physical spaces to perform work and exchange feedback. Our results reveal that the feedback app, in contrast to traditional feedback systems, is immediately perceived as digital work tool for operational-level performance feedback. As such, there are similarities to alternate systems that offer similar affordances. Namely operational feedback may be exchanged in general purpose social software (e.g., email, Slack), task-specific systems with embedded feedback mechanisms [18], and through integrating enterprise systems in social software that facilitates social interactions and feedback exchange [50]. While the feedback app is perceived as enabling personal development and growth, this second-order affordance requires employees to use the feedback app as central hub to accumulate feedback in one place. Therefore, future research should investigate how performance feedback can be integrated across systems (e.g., feedback app and enterprise systems) and sources (e.g., computer-mediated and computer-generated). Further, the feedback app introduces a novel type of enterprise social software aside from general-purpose social software such as social networks. Prior research on social software for specific purposes is scarce, hence, we provide unique contextual insights on social software tailored to the exchange of performance feedback. These findings are equally relevant for performance management literature, since they respond to calls for research to better investigate informal day-to-day feedback [51] and to examine the use of technology in managing performance [8].

**Implications for Affordance Theory.** Existing research draws on socio-technical systems theory to elaborate affordance emergence and perception [40] as well as the

actualization of organizational-level affordances [41]. We extend prior research [40, 41] by elaborating how socio-technical context factors affect the actualization process of individuals situated in organizational work environments. We contribute to existing actualization models [35, 37] since the identified factors provide a concrete explanation of how perceptions of expected value and effort are affected by the socio-technical context and why affordances may not be actualized even though they are perceived.

**Implications for Practice.** Practitioners that introduce feedback apps, should mitigate the identified constraints and inhibiting socio-technical context factors, while enhancing facilitating factors. Designers of feedback apps should consider the use scenarios and trajectories by supporting these practices and preventing the identified constraints as well as inhibiting context factors. For example, feedback apps should integrate well into software in which digital work is performed and should address the need of employees to switch between physical and digital spaces.

## 5.2 Conclusion and Limitations

Investigating the feedback app within a pilot project at InsurCorp enabled us to elaborate affordances and constraints perceived and actualized in a naturalistic case setting as well as to present facilitating and impeding socio-technical context factors.

Nevertheless, our results must be viewed in the light of its limitations. The qualitative and interpretive nature of this research prevents exhaustiveness. The selected pilot participants and interviewees possibly share behavioral and perceptual traits that may not be representative. Even though we minimized selection bias by considering employees from diverse operational entities, locations and job roles, they all belong to the same large financial services group. Finally, changes of the technical and social structures as well as data analyses in this domain are restricted by the works council. Future research in other organizational contexts and countries is needed.

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