Learn to build an error management culture

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Abstract

Purpose – Emphasizing that errors are unacceptable and will be sanctioned does not prevent that errors are made – but can cause workers to cover up mistakes. Making an effort to identify things that go wrong to learn from them and prevent errors in the future offers a more fruitful approach. By sharing an applicable LEARN framework, this paper aims to inspire and give direction to financial corporations in building an error management culture within their organizations.

Design/methodology/approach – The behavior and culture team of the Dutch Authority for the Financial Markets (AFM) collaborated closely with social and organizational psychologists from Utrecht University to study error management. The results of a literature study were combined with the findings obtained from a survey ($N = 436$) and in-depth interviews ($N = 15$) among employees of 13 Dutch financial corporations that are active within the infrastructure of the capital markets.

Findings – Tone at the top and direct managers' behavior were positively related to error management culture, which in turn related to more learning. Combining these findings with relevant psychological literature resulted in the LEARN framework, which can guide organizations in developing actions and interventions to build an effective error management culture: *L*et the board take ownership, *E*ngage employees, *A*lign structure and culture, *R*efocus from person to system and *N*arrate the best examples.

Originality/value – Stimulating financial corporations to start building a healthier corporate culture by offering the LEARN framework – and recruiting insights from social and organizational psychology to do so – extends traditional supervisory approaches.

Keywords Psychology, Supervision, Behavior and culture, Change, Error management

Paper type Research paper

> "Culture in financial services is widely accepted as a key root cause of the major conduct failings that have occurred within the industry in recent history, causing harm to both consumers and markets". – Jonathan Davidson, Director of supervision, foreword Transforming Culture in Financial Services (FCA, 2018, p. 3).

Since the financial crisis, financial corporations, politicians and the general public have been pushing for "a cultural change" in the financial sector. Moreover, an increasing number of external supervisors worldwide, such as the Financial Conduct Authority (FCA), the Financial Stability Board (FSB) and the Dutch Central Bank (DNB) are of the opinion that transforming

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toward a "healthy corporate culture" is of key importance for financial corporations to better serve the interests of customers, to prevent misconduct and to rebuild trust in the financial sector (DNB, 2008; FCA, 2018; FSB, 2017; FSB, 2018). Discussions on culture, however, often remain abstract, and financial corporations struggle with implementing desired changes. It is not always clear what in the culture needs to be transformed and how this can be done.

In this paper, we argue that error management is an important and tangible element of a healthy corporate culture, which can be incorporated in organizations' own corporate culture. This paper describes *what* an error management culture looks like, *why* it is important and *how* it can be built by financial corporations. The aim of this paper is to inspire and guide the building of an error management culture by financial corporations and integrate this into their organization, by presenting a LEARN framework: *L*et the board take ownership, *E*ngage employees, *A*lign structure and culture, *R*efocus from person to system and *N*arrate the best examples.

This paper is the result of close collaboration between the behavior and culture team of the Dutch Authority for the Financial Markets (AFM) and social and organizational psychologists of Utrecht University. We conducted an empirical study on error management, which consisted of surveys ($N = 436$) and in-depth interviews ($N = 15$) among employees of 13 Dutch corporations currently active within the infrastructure of the capital markets. The LEARN framework was developed by combining relevant psychological literature on the requirements for achieving behavioral change in organizations with the quantitative and qualitative results obtained in our study.

How can the LEARN framework help corporations in building an error management culture? LEARN is not a simple "five steps you're done" approach, nor does it contain a "one-size-fits-all advice" to organizations by specifying concrete actions that represent the desired culture. Initiatives that are popular in some organizations – such as organizing a "trophy for the biggest error," "a wall of shame" or "celebrate your error sessions" – can be effective but not necessarily help every organization. LEARN offers a framework along which corporations can design and structure actions and interventions that fit *their* organizational context. It aims to give direction to organizations in developing actions and interventions to build an error management culture. By presenting and communicating this framework, we also aim to inspire other supervisory bodies to give more "flesh and blood" to the supervision of behavior and culture.

> As an independent market conduct authority, the AFM aims to contribute to a sustainable financial system and prosperity in The Netherlands. The AFM is committed to promoting healthy corporate cultures within financial corporations, namely, corporate cultures in which organizational members demonstrate behavior that serves the interests of customers and society.
>
> In 2016, the AFM and Utrecht University started a unique form of co-creation in which AFM's behavior and culture team closely collaborates with social and organizational psychologists from the University of Utrecht's Psychology of Supervision group. Insights and lessons from supervisory practice are tested against scientific knowledge. Relevant theory, empirical research and validated methods are translated or made available for supervisory practice, and new scientific insights are developed.
>
> AFM's Behavior and Culture team focuses on identifying concrete elements of a healthy corporate culture in which the customer's interest is central. These elements represent building blocks within an organization's culture that have great potential to positively affect the quality of services to customers and ethical behavior of employees. *Error management culture, balanced decision-making* and *fair rewards and recognition* have already been identified as among the building blocks of a healthy corporate culture (Christensen *et al.*, 2018). The LEARN framework was developed conjointly, and this paper represents the shared vision of the authors.

1. What is an error management culture and why is it important?

Organizational culture is defined as "the set of shared, taken-for-granted implicit assumptions that a group holds and that determines how it perceives, thinks about, and reacts to its various environments" (Schein, 1996, p. 236). Organizational culture is also referred to as "the way things are done around here" (Deal and Kennedy, 1982). It is obvious that such general definitions offer few useful pointers for discussing culture, let alone transforming it. We argue that culture should be made specific by focusing on certain elements of the organizational culture to enable dialogue and change (Denison, 1996). Error management – the way errors are dealt with in an organization – is an element of a culture that everyone in the organization can recognize once they think of it. How do one's manager and colleagues react when errors are made? Are errors openly discussed? Are errors only dealt with to prevent a scandal in the media, or – on the opposite end of the spectrum – seen as opportunities to learn from on a day-to-day basis?

An *error management culture* exists within an organization when employees dare to admit to their errors and active communication takes place about errors[1]. Errors are detected, analyzed and corrected quickly, and knowledge is actively shared within the organization, with a focus on learning from errors (Van Dyck *et al.*, 2005). It is important to note that errors are defined as unintended deviations from plans, goals or feedback processing, as well as incorrect actions resulting from lack of knowledge (Frese and Keith, 2015; Van Dyck *et al.*, 2005). Thus, errors are unintentional, which separates errors from intentional rule-breaking behavior, such as fraud and misconduct. It is also important to separate errors from their consequences, as the same error can have no or few consequences in one situation, and a major negative impact in another. We argue that an effective error management culture not only prevents future errors from being made, but also helps contain their negative impact when they occur.

Although anyone may agree at an abstract level that "to err is human," it can be very hard for employees to admit to errors when they occur. The natural tendency is to conceal errors because one feels stupid or ashamed and is afraid to lose face, to appear incompetent, to receive a negative performance appraisal or to reduce one's chance of getting promoted (Edmondson, 1999). The result of concealing errors is that the same (or similar) mistakes will be made again by someone else in the organization, which inhibits organizational learning (Edmondson, 1999, 2003). The value of having an error management culture or a "safety culture" – which is a closely related construct – has been demonstrated extensively, with prominent examples in aviation and healthcare (Chang and Mark, 2011; Gaba *et al.*, 2003; FCA, 2018):

> Learning is a cyclical process involving the evaluation of past behavior, the discovery of error or opportunity, the invention of new behaviors, and their implementation – Lipshitz *et al.* (2002, pp. 81-82).

There is substantial scientific evidence supporting the value of creating an error management culture across a wide variety of organizations. First, an error management culture stimulates *learning* within organizations. An environment of psychological safety to discuss errors will encourage employees to talk about errors and voice their opinions, enabling organizations to learn both on a team and an organizational level. It creates a joint understanding and insight, which benefits the detection, speed and quality of the correction of errors, as well as employees' inclination to explore, experiment and innovate (Edmondson, 1999, 2003). Second, creating an error management culture stimulates ethical behavior and prevents misconduct. Employees who work in an error management culture are more inclined to report their own and colleagues' errors honestly and to act responsibly, in line with the organization's requirements (FSB, 2018; Gronewold *et al.*, 2013; Scholten and Ellemers, 2016). Third, this culture motivates employees to actively search for information and feedback from customers and to invest in the improvement of the quality of processes and products, which will contribute to a better quality of service to the customer (Hofmann and Mark, 2006; Nembhard and Edmondson, 2006). Finally, creating an error management culture leads to improved performance of individuals and teams as well as improved organizational performance (Frese and Keith, 2015; Keith and Frese, 2011; Van Dyck *et al.*, 2005). In sum, the results from prior studies in various kinds of organizations provided sufficient reason to study error management culture in financial corporations. More effective error management relates to increased learning, more ethical behavior, better quality of services to customers and better financial performance, which are desired outcomes for organizations as well as supervisory bodies.

2. Examining error management culture within 13 financial corporations

Because errors of an operational nature had been identified as an important cause of large losses for companies active on the global capital markets[2], studying the way in which errors are managed within this type of corporation was found particularly relevant by the AFM. The study was conducted by the AFM within 13 financial corporations that are active within the infrastructure of the capital markets. The 13 corporations were selected from the Dutch trading platforms and post-trading corporations, while striving to obtain a representative sample of the largest brokers, proprietary trading groups, trading platforms and post-trading corporations. Still caution is in order when generalizing specific results to other corporations in this subsector or the financial markets in general. Moreover, future research is needed to test the relationships between study variables in larger samples.

2.1 Method

The study consisted of surveys and semi-structured interviews among employees of the participating companies. Prior to the study, introductory conversations were held with the CEO and often the head of risk/compliance. It was explained that the nature of the study was theme-based (not risk-based), that no repressive measures would follow based on this study, and that the results would be published anonymously. After the study, feedback sessions were held in which the findings for each corporation were presented, along with benchmark graphs that presented how the corporation scored, relative to anonymous peers in the same sector.

2.1.1 Procedure and participants. Employees of the 13 participating organizations received an online survey sent to them by their CEO on behalf of the AFM. Employees were asked to rate – anonymously – how they perceived their organizational culture with regard to dealing with errors, how they perceived the tone at the top and their direct manager regarding errors and the extent of learning behavior they perceived. The survey was sent to 613 employees and was completed by 436 employees (71 per cent average response). Of the participants, 18 per cent held a management position. No other background variables (e.g. gender, job type) were assessed to ensure anonymity to the participants. To add qualitative depth to the quantitative findings, 15 semi-structured interviews were held with employees within five of the participating organizations.

2.1.2 Measures. Most scales were scientifically validated in previous research. All items were assessed on seven-point scales ranging from 1 (completely disagree) to 7 completely agree, with 4 being neutral. A Cronbach's α of >0.70 indicates that the construct was measured reliably. For shorter scales, an α of >0.65 is acceptable.

Error management culture was measured with the 17-item scale developed by Van Dyck *et al.* (2005), e.g. "In this organization, people think a lot about how an error could have been avoided," $\alpha = 0.96$. *Direct manager* behavior was measured with the five-item scale developed by Dimitrova (2014), e.g. "After an error has occurred, my manager analyses it thoroughly," $\alpha = 0.94$. *Tone at the top* was measured with a three-item-scale developed by Kaptein (2008), adjusted to measure tone at the top regarding errors, e.g. "The board has a clear vision on how the company should manage errors," $\alpha = 0.68$. Finally, for *learning from errors*, we adjusted the seven-item scale developed by Edmondson (1999) to reflect learning from errors, e.g. "We invite other people than our direct colleagues to think about errors that have occurred," $\alpha = 0.92$.

Examples of questions that were asked in the *semi-structured interviews* are:

- Can you describe a recent error you have made?
- How did this make you feel?
- What did you do in this instance?
- How did colleagues react? And, your manager?
- Is that typical for him/her?
- Was the error discussed in your team?

2.2 Main findings

Firstly, we found that the mean score on *error management culture* was relatively high, namely, a mean of 5.83 for the total group examined. This means that employees, on average, perceive reasonably open and honest communication about errors, and that sufficient time is taken to analyze errors (see left-side bar in Figure 1). There were substantial differences between corporations (e.g. Organizations B and H). The mean scores for *tone at the top, direct manager* and *learning* were somewhat lower. This suggests that the potential to learn from errors and for communicating a clear vision from the top and stimulating error management by direct managers is not fully realized within organizations. Again, there were notable and statistically significant differences ($p < 0.001$), with some corporations scoring much higher on these constructs (e.g. Organization B), while other organizations lagged behind (e.g. Organization H).

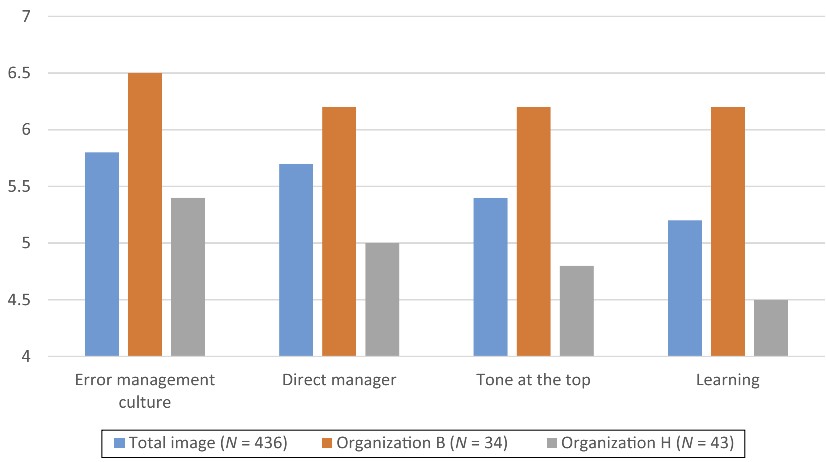

Figure 1.
Mean scores for the total group, and for a high (Organization B) and low scoring organization (Organization H)

Secondly, managerial staff scored significantly higher on all constructs than non-managerial staff ($p < 0.01$); see Figure 2. Managerial staff perceive, for example, that substantial learning takes place within the organization, but employees lower in the organization do not perceive this to the same extent. In the same vein, managerial staff rate the leadership they receive from their direct managers regarding errors as more positive than non-managerial staff and are more positive about the tone at the top regarding errors than non-managerial staff.

Third, process analyses in SPPS revealed that higher scores for tone at the top and direct manager related to better scores on error management culture and on learning. There was a significant relation between tone at the top and learning via error management culture, b = 0.36, 95 per cent CI [0.29, 0.43], and also a direct relation between tone at the top and learning (b = 0.30, $p < 0.001$). In the same vein, there was a significant relation between direct manager and learning via error management culture, b = 0.44, 95 per cent CI [0.34, 0.54], and a direct relation between direct manager and learning (b = 0.26, $p < 0.001$). These findings, visualized in Figure 3, suggest that the more the direct manager stimulates the sharing of errors, and the better the tone at the top regarding errors, the more positive the error management culture, and the more learning takes place. Because this was a correlational study, we cannot infer causality. This means that we cannot infer that improving the tone at the top *leads* to a better culture and more learning, only that the constructs are positively related to each other[3], and that positive feedback loops could exist. In this contribution, we regard "tone at the top" and "direct manager" as important factors in achieving an error management culture and improved learning. This view is consistent with previous theoretical and empirical work on the importance of the board and direct management for the culture that exists in organizations, in which culture is regarded a key driver of employee behavior, such as learning behavior (Dimitrova, 2014; Edmondson, 1999; Kaptein, 2008; Lei *et al.*, 2016). It was beyond the scope of this study to separately examine the role of middle management, but arguably, their viewpoints and actions should stimulate error management too to truly embed it in the organization (Raelin and Cataldo, 2011).

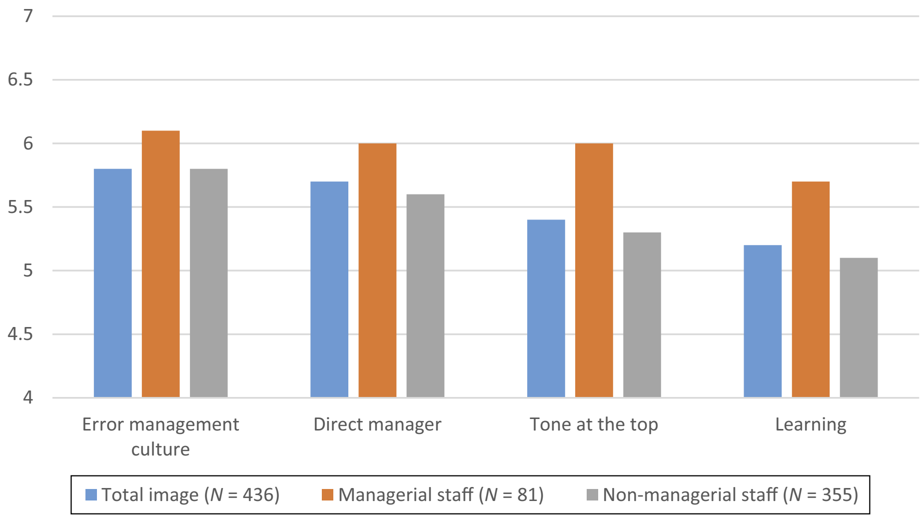

Figure 2.
Mean scores for the total group and for managerial and non-managerial staff

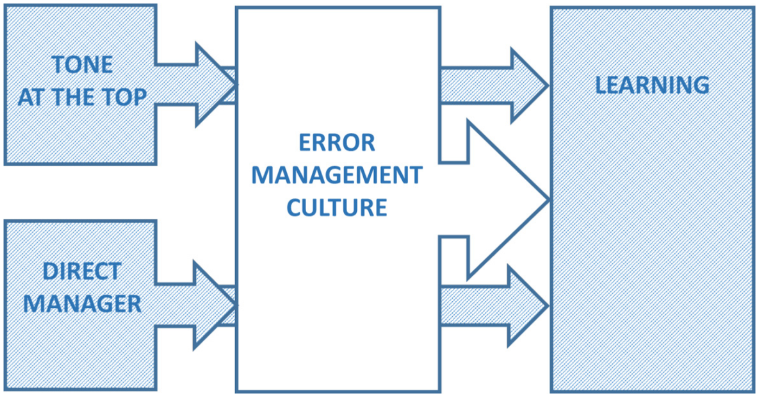

Figure 3. Tone at the top and direct manager relate to error management culture and learning

3. The LEARN framework to building an error management culture

Using the quantitative and qualitative findings and insights we gained from surveying and interviewing employees within these 13 financial corporations, and combining them with relevant insights from social and organizational psychology, we introduce the LEARN framework. The LEARN framework (see Figure 4) aims to guide corporations in building an error management culture. We first discuss the five elements separately. We then detail how the framework as a whole can be used by an organization in designing concrete actions and interventions:

> What is the CEO's stance with regard to error and incident management?
> "He does not really say anything about this, not to me in any case. I don't know how he sees this".

3.1 Let the board take ownership

Top management plays an important role in forming and shaping the culture of an organization (Castellano and Lightle, 2005; Cummings and Worley, 2009). Hence, effectively building an error management culture starts with the board taking ownership for such a

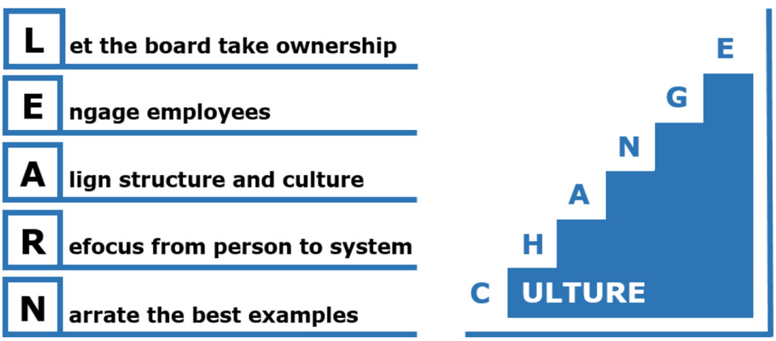

Figure 4. The LEARN framework to build an error management culture

culture and stating its vision on error management (Cummings and Worley, 2009). This is often referred to as "tone at the top". The above quote – which originates from one of the interviews we conducted – illustrates the potential lack of ownership of the board toward building an error management culture, which likely has a detrimental effect on the way employees deal with and learn from errors. Instead, when the board can clearly and simply articulate the kind of culture they want regarding errors, this is likely to have a positive effect on the error management culture. Rather than using abstract phrases, it seems essential for the board to be explicit and specific – in words – about which behaviors of employees are expected and valued (FCA, 2018; Kotter, 1995). A culture must be created in which employees are not afraid to admit to their errors, in which errors are detected, discussed, analyzed and corrected quickly and in which the resulting knowledge is actively shared within the organization with a focus on learning (Van Dyck *et al.*, 2005). In this study, we found a positive link between tone at the top and error management culture. Where the board took ownership for error management and stimulated open communication about errors (in the eyes of employees), employees reported a more open error management culture and more learning within their organization. This is nicely illustrated in the quote below:

> "I think the group is quite open [about errors]. We say it right away. I've never seen that someone kept something to him/herself. This is something the management promotes and communicates".

Moreover, it is advisable for the board to also put this vision into action by demonstrating exemplary behavior that closely aligns with the desired error management culture (i.e. "walk the talk," Dumaine and Dennis, 1990). As employees tend to mirror top management behavior (Brown *et al.*, 2005), hearing their CEO openly admitting to an error and stating what he/she has learned from it can signal to staff, and therefore the organization, that to make mistakes is human and also that even highly successful individuals make them.

3.2 Engage employees

Corroborating previous research (Cannon and Edmondson, 2005; Dimitrova, 2014; Edmondson, 1999), the positive link between direct manager and error management culture suggests that direct managers – through their role model position and error handling strategy – play a key role in creating a culture that enables employees to learn from errors. Managers who regard errors as part of daily life see errors as opportunities for learning and provide a psychologically safe environment in which to openly report, discuss and share errors and related concerns, thus effectively creating an error management culture where increased learning can take place (Alonso Rodriguez and Griffin, 2009; Dimitrova, 2014; Frese and Keith, 2015; Edmondson and Lei, 2014; Van Dyck *et al.*, 2005). Creating psychological safety as a manager and engaging employees in error management is, however, not an easy task. Simply scheduling "lessons learned sessions," for example, is not enough, as is evident from the quote below:

> "We have to do those 'lessons learned' meetings; the manager tries to let us see what we did wrong. I learned a lot, but at the same time it feels like your daddy is talking to you".

Because of the human tendency to not talk about errors and conceal them (Edmondson, 1999), it is advisable for direct managers to actively and sincerely engage and invite employees to help think about the best way to manage errors. It is essential for employees to feel that their input is valued and taken seriously to improve things together. Below we discuss how the LEARN framework could be used to redesign such "lessons learned sessions" in organizations. Interestingly, we found a systematic gap between managerial and non-managerial staff in that managers were more positive about the error management culture, the tone at the top, leadership and learning. Possibly, managerial staff is not fully aware that the work floor perceives the work environment, on average, as less inviting to share errors. Conducting the error management survey could make managers more aware of such a gap and could motivate managers to engage employees more. In the literature, employees are seen as the most important stakeholders in transforming culture as actively engaged employees will experience ownership of the change and feel more accountable for achieving new standards (Riordan *et al.*, 2005). The quote below is a positive example of a manager trying to stimulate an open discussion of errors:

> "As a manager you must prevent employees from thinking they won't get promoted or qualify for a bonus if they have made an error. Focus on learning. When an error is made, you must see it as an opportunity for improvement".

3.3 Align structure and culture

It is broadly accepted that both the structure (systems, policies, procedures) and the culture of an organization influence employee behavior (Kish-Gephart *et al.*, 2010; Lawrence and Lorsch, 1967). The FCA (2018) and FSB (2017) describe that adjusting both structural and cultural elements *and aligning* these stimulate desired employee behavior. The following quote illustrates alignment between structure and culture in terms of error management:

> "You must do it (preventing errors) together, work together closely and with the same goal. Lines are short here and it is very open. When something goes wrong, the system makes sounds, for example when an order exceeds limits. The employee himself also gets a notice on his computer 'this is your client'. In just a few steps you are at the risk department, and vice versa by the way. Everyone is up to speed quickly and no-one is withholding information or opinions".

When structure and culture are misaligned, employees receive mixed signals about the desired behavior (Mayer *et al.*, 1993). Managers who, for example, try to build an error management culture by actively valuing the sharing of errors but fail to put a practical system in place to report the errors that occur on a day-to-day basis are unlikely to achieve their goal. The following quote is an example of misalignment between structure and culture:

> "I can log a high priority error in the system, but no one sees it, no one does anything with it".

In deciding which structural elements need to be transformed to improve error management, it is again essential to engage employees (Kotter, 1995). Managers can stimulate employees to speak up by asking for input on hindrances and barriers for employees to show specific behaviors, such as the logging of errors or openly discussing errors. Employees' complaints about specific administrative systems, inconsistent requirements, unclear policies, work/target pressure and so on provide valuable direction for aligning structural elements with the desired error management culture.

3.4 Refocus from person to system

When an error occurs, correcting it as quickly and adequately as possible is often top of mind. However, to truly create an error management culture, it is essential to also focus on what can be learned from the error, at the individual and team level and perhaps also at the organizational level by *sharing* the errors. The quotes below illustrate a lack of sharing at the group level:

> "This year I feel it's been a lot [number of incidents]. If a [. . .] [name of error removed to ensure anonymity] comes in, we can't just call them, and we really find out things very late, and that's also what can cause incidents".
> "When I was not involved in things or information isn't shared, I can get angry. If we don't hear about it, it's difficult to improve and know how to change it".

The sharing of errors and analyzing how they come about reveal a broader picture and can lead to specific ways to prevent similar errors from happening in the future. In doing so, it is essential to refrain from attributing the error to a *personal trait* (he/she did that, because he/she just *is* [. . .] [. . .].). Instead, it must be analyzed *why* someone behaved in a certain way, by shifting the focus away from individual employees and put it instead on the system in which these errors occurred. Very often, the cause of the problem is *not* the person, but the system in which he or she operates. This is also evident in cases of misconduct, where merely removing the "rotten apples" does not help to prevent similar problems in the future (Kish-Gephart *et al.*, 2010; Scholten and Ellemers, 2016). The behavior of employees is, to a large extent, influenced by the broader system in which they operate – the so-called "corrupting barrels" perspective – which can include cultural elements (e.g. team dynamics) and structural elements (e.g. reward systems) in an organization (Haslam and Ellemers, 2011; Kish-Gephart *et al.*, 2010). Hence, when errors occur (keeping in mind that errors are *unintentional* mistakes), instead of focusing on the "guilty" person, organizations would do much better to conduct an in-depth analysis of *why* this error occurred. This helps organizations and its members to learn which cultural patterns or structural elements should be changed or consolidated to achieve effective error management. The quote below illustrates how one manager aims to accomplish this:

> "We talk openly, so people are aware that others make mistakes too, and see how we handle things. If I were to take one person aside, that person would be the only one learning from a mistake. In this way, the message is: be careful, this can happen to you too" (manager).

3.5 Narrate the best examples

In the literature, the attention for "positive psychology" is growing. This is relevant for building an error management culture because it informs us that narrating the best examples, and emphasizing the positive side, helps increase the effectiveness of the change process (Stajkovic and Luthans, 1998). Rather than focusing on departments that lag behind, a regular visit from top managers to departments that score high on error management culture and sharing their best practices can set a positive example which employees want to conform to. This approach also provides clarity to employees about the type of behavior that is desired (Cameron, 2008). Also, from the interviews, we identified "narrating the best examples" as a powerful motivator to start sharing errors openly. An important example involved a corporation in which employees were not penalized for making or reporting an error, but instead were regarded as sharp or smart for having spotted opportunities for improvement. There was a list on the wall stating the number of logged errors. But, far from embarrassing, being on the list was actually a badge of honor. On this, work floor employees who reported the most errors were viewed positively because they were the best at identifying improvement possibilities. The list was a clear example of best example narration, as illustrated in the first quote below. The second quote illustrates the use of positive psychology more generally:

> "The list [with reports of errors] is not read as a list of people who make the most mistakes, but as people who are the sharpest at detecting errors. It is immediately clear that it is not there to shame people as it includes some highly regarded traders".
>
> "We would really like to share things more and then pull works better than push. You have to facilitate this, for example by sending employees to other departments and offices on a project basis. That way you can learn from each other" (manager).

We also shared best practices between participating corporations and benchmarked corporations with each other. Corporations were eager to know how they performed compared to their anonymous competitors. We felt that being presented with empirical evidence of other corporations scoring higher or lower on error management motivated corporations to continue working on error management, either to stay in a leading position or to improve. Notably, following the study on error management, some of the participating corporations seemed intrinsically motivated and eager to learn more and voluntarily used the methodology to repeat this study on a global scale or went on to take next steps in managing errors and monitoring progress.

In summary, the LEARN framework can support corporations who want to build or improve an error management culture. It informs organizations on structuring their actions and interventions and what to avoid, noting that each of the five elements should be specified and adapted by the organization to fit the organizational context

(Piena and Christensen, 2015). Moreover, it is advisable to design interventions along the framework as a whole, as more than one element could be relevant. Take for example improving the "lessons learned" sessions in one's corporation. Redesigning such sessions primarily concerns engaging employees more (the "E"), with a highly important role for the direct manager. For instance, by empathizing and making sure that shared errors will not be part of employees' performance appraisals, and that the focus is on learning as a group and preventing similar errors in the future, employees will probably notice right away whether the manager is sincere or not in his/her endeavors to stimulate the sharing of errors and eliciting ideas to prevent them. Therefore, managers need to understand how difficult it is for employees to share errors because of feelings of shame and incompetence, and also what the benefits for the team and the organization are when they would. The manager is advised to compliment the employee that opens up and shares his/her error (also element "N") and to emphasize that every other employee could have made the same error. It is also important for managers to be aware that their reaction to one employee who shares an error sets the tone, which makes it more or less likely that colleagues will share their errors and ideas. In their responses, managers' skills in refocusing from the person who has made the error to broader system in which the errors have occurred ("R") will stimulate learning as a team. After such lessons learned sessions, the manager makes sure there is a follow-up. In this way, employees see that it is worthwhile to share errors, and that the manager strives to take away structural barriers that hinder an open error management culture ("A").

4. Studying behavior and culture as a supervisory body

Stimulating and guiding financial corporations to build a healthier corporate culture differs considerably from traditional supervisory approaches. Therefore, we discuss in more detail what behavior and culture supervision entails and why we take this approach. To date, supervisory bodies have mainly taken a legal approach, examining whether an organization's conduct outcomes comply with regulation. In a simplified picture, the relevant regulation (i.e. laws, official guidance, principles, codes) that applies to a specific organization can be considered to be on the "input" side of the organization, whereas the tangible conduct outcomes (i.e. quality of financial products and services) are on the "output" side (see Figure 5).

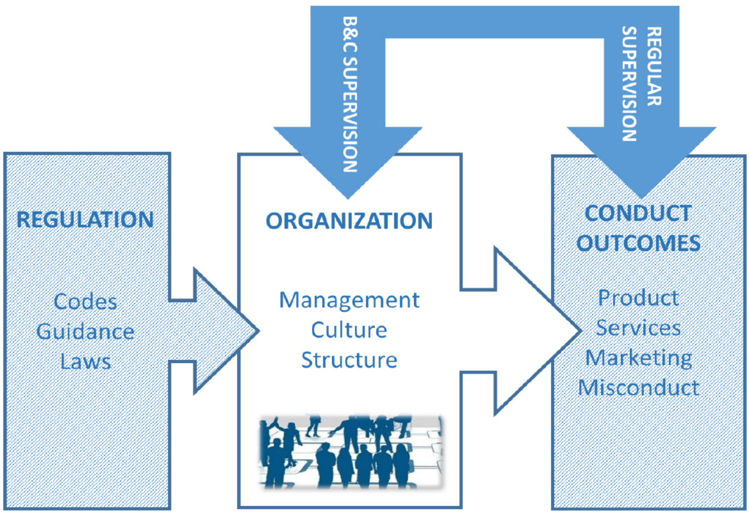

Figure 5.
Behavior and culture supervision: examining what happens inside the organization

Regulation is meant to steer the organization's conduct in "the right" direction, and the role of the supervisor is to examine whether an organization's outcomes comply with regulation. The supervisor can sanction or fine an organization in the case of non-compliance as a means to deter that organization (and hopefully others) from coming to those outcomes in the future. However, within this legalistic perspective, *the fact that* certain conducts, products or services do not comply with the law is the only thing that can be established. *What the root cause is of things that* go wrong and *why* this is the case cannot be determined, let alone that sanctioning stimulates a positive and sustainable change within organizations. Moreover, fines and sanctions alone are ineffective in steering human behavior in organizations (Feldman, 2018; Fehr and Rockenbach, 2003; FSB, 2018; Tenbrunsel and Messick, 1999). Mooijman *et al.* (2017) found, for example, that threatening with sanctions as an attempt to prevent rule breaking may not be optimally effective because this fosters feelings of distrust and can undermine compliance motivation. Moreover, solely working from a legalistic perspective can create a narrow focus on "what is legal," overlooking conduct that is "legal but harmful" for customers or the society as a whole (Sparrow, 2000). Therefore, to broaden and strengthen regular supervision, behavior and culture (B&C) supervision examines what happens *inside the* "black box" of the supervised organization. This form of supervision explicitly focuses on the culture of an organization and the way in which the culture, together with the organization's management and structure steer employee behavior. Insights into the culture make it possible to identify high risk behavior before (more) harm is done.

5. Conclusion

"Corporate culture cannot be grasped," "[. . .] [. . .].cannot be changed," "[. . .] [. . .] cannot be supervised". These are common concerns and often-heard complaints. This paper offers a framework to make culture more concrete in order to make culture change more realistic. We specified what an error management culture looks like, why it is important, how it can be measured and how financial corporations can start building such a culture. By sharing our findings and by proffering the LEARN framework, this paper can help financial corporations to start building an error management culture.

Of course, it is not simple to transform culture, but it is certainly possible to make significant progress (FCA, 2018). We argued that focusing on a specific element of culture, namely, error management, and making this element as specific as possible is a more realistic goal than trying to change "the culture" in general. Moreover, willingly or unwillingly, every corporation already has some way of dealing with errors, so why not strive to make progress in learning from errors? The board and direct management play a crucial role in emphasizing the importance of error management and showing exemplary behavior. HR, compliance and specialized culture teams play an important part in studying and monitoring an error management culture. They can also help by starting a dialogue about errors, educating managers and providing handy tools that improve work processes. To avoid the risk that no one truly feels responsible, it seems advisable to appoint "ambassadors" for this movement that receive position, support and resources to embed an error management culture in the organization. Hopefully, the LEARN framework is helpful in this regard.

External supervisors are in a unique position to study culture, to benchmark organizations and press for change, given their access to information and employees throughout and across the organizations they supervise (FSB, 2017; Ring *et al.*, 2016). After conducting this research, feedback sessions were held with the CEO and the compliance officer/CRO of each corporation. The aim of the feedback session was to have a dialogue about the findings and about ways to improve. B&C supervisors organized these sessions.

The account supervisor joined to monitor whether or not the corporation makes progress after the feedback session. Additionally, the AFM published the report "learning from errors" and organized masterclasses in which participants – mostly compliance officers – learned how to study error management culture within their corporations. We now see some best practices of corporations that have already started to monitor the error management culture, especially when these corporations have experts or expert teams in place to study behavior and culture.

It is important to avoid supervising behavior and culture in a tick-the-box manner. LEARN is not a risk-based instrument, but instead meant to inspire and guide corporations that want to develop a healthy (or healthier) corporate culture. External supervisors are advised to "stand next to" the organization when discussing directions for improvement (IMF, 2018) and examine whether they undertake sincere and persistent efforts to gain insights in their culture and to transform their culture. Focusing on the efforts organizations undertake to develop and master competencies – whether they are *learning* – will allow them to grow toward a healthier culture than they had before (Ring *et al.*, 2016). Evaluating an organization's efforts in terms of progress and improvement and requiring the board to stimulate a culture that is characterized by learning, development and cooperation are more likely to stimulate integrity and actual learning (Ames, 1992; Argyris, 1991; Van Yperen, 2003; Van Yperen *et al.*, 2011). The responsibility for creating a healthy culture remains with the corporations themselves.

In conclusion, creating an error management culture is likely to yield significant gains, as it stimulates innovation and learning (Edmondson, 1999, 2003), relates to more ethical behavior higher quality of services to customers and results in better financial performance for corporations (Gronewold *et al.*, 2013; Hofmann and Mark, 2006; Van Dyck *et al.*, 2005). The LEARN framework can guide corporations on the path toward building an error management culture: Does the board take ownership for creating an error management culture? Are employees truly engaged and stimulated by their managers? Are specific structural and cultural elements adjusted to align the organization's structure and culture? Is the focus on analyzing the system as a whole when errors are made, instead of focusing on the individual who made the error? And, finally, is the power of narrating the best examples used in an organization? Then, the corporation has every chance of making progress in building a successful error management culture and accelerate learning.

Notes

1. For more elaboration, see the full AFM (2017) report "Learning from Errors".
2. Capital markets play an important role in the economy. The AFM promotes fair and efficient operation of capital markets so that all market parties have equal opportunities, and that everyone abides by the rules. During the last ten years, problems of an operational nature were an important cause of large losses at companies active on the global capital markets. Trading has been strongly computerized, and developments such as high-frequency trading are proceeding fast. Therefore, the impact of problems of an operational nature is growing as is the importance of adequate risk management.
3. Specifically, direct manager related positively to tone at the top ($r = 0.56$), culture ($r = 0.76$) and learning ($r = 0.68$). Tone at the top related positively to culture ($r = 0.62$), learning ($r = 0.65$) and culture to learning ($r = 0.75$), all significant at the 0.01 level. This indicates that variables are strongly linked to each other. Confirmatory actor analysis, however, confirmed that the construct can be regarded as statistically distinct as the four-factor model fitted the data better than alternative facto models. Further statistical details are available upon request.

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