Change Management in the Context of Digital Transformation: A Comparison Between a Theoretical Model and Successful Approaches in Organizations

Diana Andreea Firican[1]
[1)]*Bucharest University of Economic Studies, Bucharest, Romania*
E-mail: diana.firican@gmail.com

Please cite this paper as:

Firican D.,2023. Change Management in the Context of Digital Transformation: A Comparison Between a Theoretical Model and Successful Approaches in Organizations. In: R. Pamfilie, V. Dinu, C. Vasiliu, D. Pleșea, L. Tăchiciu eds. 2023. *9th BASIQ International Conference on New Trends in Sustainable Business and Consumption.* Constanța, Romania, 8-10 June 2023. Bucharest: ASE, pp. 472-479

DOI: 10.24818/BASIQ/2023/09/056

Abstract

The COVID pandemic has accelerated the digital transformation (DT) in organizations. Given that organizations with high digital maturity enjoy better financial outcomes than their competitors, budgets for digital transformation have recently increased significantly. This article provides a narrative review of the change management (CM) practices that have proven successful in the context of DT in comparison to the theoretical CM models, with three purposes: firstly, to validate the most effective CM practices for DT, secondly, to identify existing, but unemployed theoretical CM practices that could benefit DT and thirdly, to enhance the field of CM with new tactics that have proven successful in DT. Given the rapid pace of DT during COVID, the organizational change has been done ad-hoc and often without structure or analysis. This paper compares DT and CM theory and practice for the first time in the context of COVID. The findings show that leadership support, engaging people managers, creating change agent networks, efficient communication, training, as well as change reinforcement lead to better DT outcomes. DT could employ more of the tactics suggested by the CM theory in the areas of communication, coaching of people managers, leveraging change agent networks, assessing organizational change readiness and resistance management tactics. CM could adopt new tactics regarding participation of employees, collaboration with external partners and attracting outside talent. Both could benefit from more emphasis on organization culture. The findings represent a good foundation of best practices for DT and for developing a CM model that applies specifically to DT.

Keywords

Digital transformation, change management, change management model, digital culture.

DOI: 10.24818/BASIQ/2023/09/056

Introduction

Since 2019, the COVID pandemic has caused an acceleration of the digital transformation (DT) in organizations of all sizes, maturities, profit or equity structures (Subramaniam et al., 2021) by as much as 3 to 4 years, according to the McKinsey Global Survey with executives (2020). DT may have had a defined beginning, but in a so-called VUCA environment, characterized by volatility, uncertainty, complexity, and ambiguity, there is no end in sight. Organizations are and will continue to be forced to go through continuous digital transformation in order to survive (Hartl, 2019; Mergel, Edelmann and Haug, 2019).

More than mere survival and staying afloat, DT represents an opportunity of revival, upgrade, progress and reinvention, by better utilizing current, as well as tapping into unexplored market shares, engaging with new customer groups, and confidently ending the collaboration with the less or not profitable ones. DT has the potential to challenge and support organizations in creating self-sustaining change, with durable influence on technological, organizational, cultural, as well as social aspects (Dunleavy et al., 2006).

Last, but not least, successful DT promises better financial outcomes, as research shows that digirati, i.e. companies with high digital maturity, enjoy higher market shares, revenue and profit than their competitors (Fitzgerald et al., 2014). Thus, companies have significantly increased the budgets allocated to digital

transformation (McKinsey, 2020), striving to make best use of the associated opportunities. Consequently, the questions arise: how well did organization manage their DT, what were their outcomes and what could they do better in the future? Even though these questions are present, there is little literature providing guidance on how to manage the change that is DT (Mergel, Edelmann and Haug, 2019).

DT can only be realized through well-managed transformational activities. The best change management (CM) approach is contextual and must be adapted to each situation. The roadmap to DT is created of each time a different combination of CM activities. There is no one-size-fits-all. Despite this complexity, there is little emphasis on CM for DT (Osmundsen, Iden and Bygstad, 2018).

This paper provides a literature review of the CM approaches that have proven successful in the context of DT, then creates a parallel with the theoretical CM models, to identify similarities and differences, as well as missed opportunities on both sides, highlighting both the shortcoming of the existing CM models and ways in which organizations undergoing digital transformation could leverage the theory more. The article will provide firstly an overview of the scientific literature on DT and how it is different than other types of changes, as well as on change management models, with emphasis on Hiatt's ADKAR model (2006). It will proceed to explain the methodological approach, followed by a results and discussion section, which highlights the outcomes of the comparison between the CM approach used in DT practice and the CM theorical models. Finally, the conclusions summarize findings and gives suggestions for further research.

1. Review of the scientific literature

Digital transformation (DT) implies both the obvious aspects of using of digital technologies, creating new applications, migrating to the cloud or integrating artificial intelligence and machine learning (Gong and Ribiere, 2021), as well as strategy alignment and must involve people, culture, mindset, talent development and leadership (Goran, LaBerge and Srinivasan, 2017). On top of the contributions of digitization and digitalization, DT additionally emphasizes the cultural, organizational, and relational changes (Mergel, Edelmann and Haug, 2019), such as innovative interaction and collaboration (Shaughnessy, 2018). More than just being IT's responsibility, DT involves all areas of an organization, meaning processes, policies, people and leadership support (Mergel, Edelmann and Haug, 2019). This makes DT a special kind of change. The main differences between conventional change and DT lie in the following characteristics:

- Continuity: DT is not a fixed, linear, limited-in-time endeavor, but an iterative process, needing constant readjustment (Mergel, Edelmann and Haug, 2019), challenging organizations to be flexible; because of VUCA and the rapid technological advances, DT is a process without a foreseeable ending in sight.

- Speed: The fast pace of DT allows for little planning (Bharadwaj et al., 2013), requiring responsiveness, rapid action and decision making.

- Technology centricity: Technology, with its incremental, respectively radical changes, whether emerging from within or outside the organization, predictable or not, dictates the cadence of DT.

- Culture: DT has a strong relationship to organizational culture, which can be both a barrier and an enabler for DT (Gong and Ribiere, 2021); their impact is reciprocal: organizational culture influences DT and, conversely, DT influences organizational culture; culture also acts as determinant of the appropriate CM approach (Gürkan and Çiftci, 2020)

- Participation: Impacted groups are involved in and co-create the change (Hartl, 2019), being empowered to contribute with ideas, actions and decisions; this is seen as a central aspect of DT's success.

- Collaboration, both internal and external: DT requires openness to collaborating with internal stakeholders, as well as customers (Goran, LaBerge and Srinivasan, 2017), but also with other parties, such as start-ups, for leveraging as much knowledge as possible in the VUCA environment (Hartl and Hess, 2017)

- Scale and scope: DT affects all aspects of the organization, being not only a technological shift, but a transformation of processes, policies and procedures, people with their workflows and behaviors, mindset and culture, and needs involvement from the whole organization, not only top to bottom (Kotter, 2010), but also bottom-up, as well as leveraging of external parties.

These characteristics challenge organizations and CM practitioners to adjust, improve, even revolutionize their approaches to meet its requirements and lead to successful outcomes. As DT does not happen by accident (Buvat et al., 2017), CM tactics must be employed to reach and exceed the desired results.

Organizational changes, whether it be changes in processes, workflows, technology or organizational structure, have high chances of failing, if the population needing to undergo and live with the change is not

onboard. CM is the people side of change (Hiatt and Creasey, 2003), which ensures the buy-in of the impacted groups in the change endeavor, making sure they have the right information, motivation, knowledge, skills and support systems in place to make the change stick.

Hiatt defines following aspects of CM:

- Sponsorship, i.e. leadership buy-in, continuous support of the change and acting as faces of the change.
- Communication, i.e. informing timely, extensively and exhaustively about the changes, its impacts and the roadmap from the current state to the desired future state.
- Training, i.e. ensuring the impacted group have the knowledge, skills and practical ability to function and be successful in the reality of the change.
- Coaching, i.e. guiding managers in becoming role-models and addressing issues and concerns arising from employees impacted by the change throughout the whole change process.
- Change agents, i.e. creating networks of champions or ambassadors to advocate for the changes and providing accessible support to impacted groups in dealing with the challenges of the change.
- Change readiness, i.e. the openness and availability of impacted groups to undergo a change at a certain point in time, as well as ways to increase the level of openness.
- Resistance management, i.e. anticipating and addressing points of resistance to the proposed change.
- Reinforcement and feedback, i.e. sustaining the change, and turning change into second nature.
- Culture, newly, due to its influences on people's mindset, behaviors and responses to change.

Hiatt's CM model is based on the ADKAR sequence, stating that every individual goes through 5 stages of change, irrespective of the nature of that respective change: Awareness of the need for change, Desire to engage with the change, Knowledge to on how to change, Ability to implement skills and behaviors and Reinforcement to sustain the change (Hiatt, 2006). CM provides the tactics to use at each respective stage for the change to unfold successfully and reach its desired outcomes. This paper will further analyze how these CM concepts have been employed in DT, and how theory and practice can enhance each other.

2. Research methodology

The methodological approach consisted in a narrative literature review and critical analysis of various articles predominantly available on Google Scholar and published in the last 10 years. The pool of data has been gathered through extensive searches over the Internet of web pages and articles with the help of following keywords: digital transformation, change management, change management models, organizational culture, digital culture. The article have been reviewed from the perspective of the CM practices used in the context of DT and how the identified CM approaches overlap with existing CM theory.

Firstly, the present literature review emphasizes the importance of DT and how it represents a change. Secondly, it defines CM and describes its concepts from a theoretical perspective, based on established CM models, with focus on Hiatt's CM model, based on ADKAR (Hiatt and Creasey, 2003; Hiatt, 2006). It then gathers all the CM practices that have proven successful in the context of DT. Fourthly, the paper identifies overlaps, differences and missed opportunities between practice and theory. Lastly, suggestions are made for further research that could enhance the current knowledge of CM and DT.

3. Results and discussion

The analysis has drawn similarities and differences between how change management theory suggests to handle change and how DT was realized in practice. Moreover, potential opportunities have been identified that can enrich the field of change management, as well as provide additional best practices for DT. Table 1 provides an overview of the practices employed in organizations during DT. The identified similarities between DT in practice and CM theory are the following:

- Leadership: CM states that the single most important success factor of any change is Sponsorship; similarly, DT places leadership support in the top of its practices; Leadership is expected to be fully committed, align the organization's strategy to DT, provide a clear vision for and act as faces of DT.

• People managers: CM and DT agree on the importance of people managers, as being in close contact with the impacted groups; they are expected to act as role-models walking-the-talk of the change, empowering them to address impacted groups' concerns, managing their reactions to change, as well as keeping them up-to-date with the progress of the change and actively involving them in the change.

• Communication: CM and DT see the seamless flow of, unobstructed access to and constant sharing of information between stakeholders from top to bottom and up again, as well as creating a sense of urgency around the change as critical to the success of DT.

• Training: CM and DT put high emphasis on ensuring that the necessary knowledge, skills and abilities are provided to the impacted groups and identified a multitude of means and tactics for realizing it.

• Change agents: Setting up a network of champions or ambassadors is seem as a valid tactic in both CM and DT; they are expected to advocate for the change, be the go-to people at arm's-length inside of each department or unit for questions and support regarding the change, communicate feedback and signalize issues from the field, as well as play and active role in the sustainment of the change.

• Reinforcement: DT and CM agree on the sustainment tactics, such as having a reward system in place, celebrating successes, connecting performance to desires behaviors of DT and creating feedback loops.

• Individual change: CM and DT align on the fact that the impacted groups need to be onboard with the change, for it to be realized successfully; they need to understand the need for change, desire it, thus changing their mindset, behaviors and responses, for ultimately to live the change as second nature.

Table no. 1. Successful Change Management Approaches in the Context of Digital Transformation

Concept	Successful Change Management for Digital Transformation	Authors
Leadership/ Sponsorship	**Success factors:**	
	Committed leadership	McKinsey, 2020
	Alignment of strategy and leadership	Gong & Ribiere, 2021
	Leadership to change fundamentally	Mergel et al., 2019
	Leadership vision leading to convincing of employees	Fitzgerald et al., 2014
	Motivation & commitment of stakeholders	Zaoui & Souissi, 2020
	Risks:	
	Lack of senior support	Gong & Ribiere, 2021
	Lack of vision, support and unclear business case	Fitzgerald et al., 2014
	Best practices:	
	Leadership providing clear vision and guidance	Zaoui & Souissi, 2020
	Leadership to articulate vision and act as roles models	McKinsey, 2020
	Decision made at the top	Hartl, 2019
	Leaders to receive, disseminate and act upon information speedily	McKinsey, 2020
Coaching/ People Managers	**Success factors:**	
	Engaging managers	Osmundsen, 2018
	Acting as role-models and embody the changes	Wokurka et al., 2017
	Actively involvement of employees in transformation	Osmundsen, 2018
	Risks:	
	Management not empowered to be a catalyst leading to failure	Buvat et al., 2017
	Best practices:	
	Train the trainer for managers on their role	Goran et al., 2017
	Agile trainings	Goran et al., 2017
	Workshops with managers	Wokurka et al., 2017
	Coaching for dealing with own and team's emotions during change	Wokurka et al., 2017
	Addressing conflicts, discrepancies, uncertainty and power struggles	Osmundsen, 2018
Communication Awareness (first A from AKDAR) Creating a sense of urgency (Kotter)	**Success factors:**	
	Information and communication	Hartl, 2019
	Digital transformation portrayed as critical	Fitzgerald et al., 2014
	Internal and external information sharing	Hartl & Hess, 2017
	Risks:	
	Internal silos	McKinsey, 2020
	No sense of urgency	Fitzgerald et al., 2014
	Best practices:	
	Giving more context to employees	Goran et al., 2017
	Creating a sense of urgency	Hartl, 2019
	Reach out to employees	Buvat et al., 2017
	Global information and information sessions	Wokurka et al., 2017

Involvement of Employees/ Desire (D from ADKAR)	**Success factors:** Participation: Change decisively shaped by employees Employees engaged with changes and reduced hierarchy **Risks:** Change conceptualized by small group and rolled out to organization Non-democratic decision making **Best practices:** Establishing feedback loops Open, non-hierarchical discussion Involving employees in decision making Engaging and integrating employees in co-design of the change	 Hartl, 2019 Osmundsen, 2018 Hartl, 2019 Hartl & Hess, 2017 Gürkan & Çiftci, 2020 Hartl & Hess, 2017 Goran et al., 2017 Mergel et al., 2019
Individual Change/ Desire (D from ADKAR)	**Success factors:** People to change mindset and support digital transformation Employees to adapt fast during radical changes, Alignment of […] people, mindset and information access Employee motivation, cooperation & acceptance of DT Concern for people **Risks:** Attitude of old workers as risk Gap between employees and leadership leading Different stakeholders are at different stages in their change curve Feelings of uncertainty, loss or resistance **Best practices:** Employees empowered to take on new challenges Clear business cases of impacted population	 Mergel et al., 2019 McKinsey, 2020 Gong & Ribiere, 2021 Gürkan & Çiftci, 2020 Hartl & Hess, 2017 Fitzgerald et al., 2014 Buvat et al., 2017 Kübler & Kessler, 2005 Wokurka et al., 2017 Buvat et al., 2017 Halpern et al., 2021
Training; Knowledge and Ability (K and second A from ADKAR)	**Success factors:** Building skills Change in competencies, cognitive abilities, technological perceptions Learning and failure tolerance Knowledge exchange and enhancements Growing information system capabilities and dynamic capabilities **Best practices:** Employees compensated for learning; investment in digital skills Job rotations, lunch & learn, network events, post-mortems	 Zaoui & Souissi, 2020 Mergel et al., 2019 McKinsey, 2020 Hartl, 2019 Osmundsen, 2018 Buvat et al., 2017 Hartl, 2019
Retaining & Hiring Talent: Ability (Second A from ADKAR)	**Success factors:** Alignment of […] talent development Attracting and retaining digital talent Filling gaps of cutting edge technology skills Leveraging external and internal knowledge **Risks:** Lack of talent **Best practices:** HR processes such as talent management in place Outside hires from start-ups or established digital natives Mergers & acquisitions, customers, start-ups, other business units	 Gong & Ribiere, 2021 Wokurka et al., 2017 McKinsey, 2020 Osmundsen, 2018 Gong & Ribiere, 2021 Wokurka et al., 2017 Goran et al., 2017 Osmundsen, 2018
Champions/ Ability (2nd A ADKAR)	**Best practices:** Creating coalitions of the willing or change ambassadors Deploying change agents	 Hartl, 2019 Buvat et al., 2017
Sustainment & Rewards Reinforcement/ (R from ADKAR)	**Success factors:** Lasting change through reinforcement **Best practices:** Feedback loops in place Awards and recognition, personal advancement, financial incentives Employees incentivized to break new ground and build new models HR processes: performance management and reward systems	 Mergel et al., 2019 Mergel et al., 2019 Fitzgerald et al., 2014 Buvat et al., 2017 Wokurka et al., 2017
Organizational Culture, Change Readiness & Resistance to Change	**Success factors:** Change in bureaucratic and organizational culture Culture of experimentation, innovation, responsiveness & fast action Culture as enabler or barrier Organizational culture to update or change Supportive organizational culture Openness to change **Risks:** High risk aversion Lack of change readiness Resistance to new approaches	 Mergel et al., 2019 McKinsey, 2020 Gong & Ribiere, 2021 Gürkan & Çiftci, 2020 Osmundsen, 2018 Hartl & Hess, 2017 Gong & Ribiere, 2021 Halpern et al., 2021 Fitzgerald et al., 2014)

	Best practices: Assessment of existing and definition of desired culture	Hartl, 2019
Internal & External Collaboration; Customer Orientation	**Success factors:** Reducing silos internally Removing barriers to collaboration Cooperation Allowing joint business-IT initiatives Customer focus and customer change management **Best practices:** Collaboration with start-ups and other external partners Collaboration of organization and customers in co-creation of change Teamwork, cross-functional collaboration Readiness for cooperation with partners Micro-units, visible and transparent work, social interaction	 Goran et al., 2017 Goran et al., 2017 Hartl & Hess, 2017 Wokurka et al., 2017 Goran et al., 2017 Hartl, 2019 Mergel et al., 2019 Hartl & Hess, 2017 Hartl & Hess, 2017 Shaughnessy, 2018
Data & Key Performance Indicators (KPIs)	**Success factors:** Ensure and leverage analytics skills within companies Successfully managed data-related risks **Risks:** Lack of data Lack of data **Best practices:** Defining KPIs Adjusting KPIs to meet organizational goals Designing KPIs based on behaviors, not failures or successes	 McKinsey, 2020 McKinsey, 2020 Goran et al., 2017 Fitzgerald et al., 2014 Fitzgerald et al., 2014 Buvat et al., 2017 Buvat et al., 2017
Infrastructure as Support: Physical Space, Processes & Technology	**Success factors:** Process and policies, not IT, to support change Infrastructure for experimenting & innovating **Risks:** Inflexible, well-established policy systems Lack of IT infrastructure and business processes too rigid Legacy technology **Best practices:** Use of more advanced technology Use for digital technologies to drive change Architecture: open spaces, areas for brainstorming, etc. Reshaping organizational structure to suit demand	 Mergel et al., 2019 McKinsey, 2020 Dunleavy et al., 2006 Goran et al., 2017 Fitzgerald et al., 2014 McKinsey, 2020 Hartl, 2019 Hartl, 2019 Gürkan & Çiftci, 2020
Incremental vs. Radical; Continuous vs. Scoped Change	**Success factors:** Change as continuous process needing iterative adjustments Change as environment, not a point in time Breaking out of project mindset **Risks:** Change as a project with clear boundaries of time, scope, resources Innovation fatigue **Best practices:** Starting with planned approach, constantly adapting and evolving it Agile framework Pilot projects: First movers in experimenting with new technology	 Mergel et al., 2019 Dunleavy et al., 2006 Shaughnessy, 2018 Hartl, 2019 Fitzgerald et al., 2014 Hartl, 2019 Shaughnessy, 2018 McKinsey, 2020

The identified opportunities for a more successful DT by employing CM practices are presented below:

- Communication tactics: CM provides DT with guidelines for the definition of the right channels, target groups, key-messaging, for how and when sponsors and people managers should communicate, as well as for planning effective communication campaigns to elicit the desired results.

- Coaching of people managers: Few organizations undergoing DT truly provide coaching for their people managers to be successful in their critical role; CM provides extensive tactics and support on how to guide, empower and accompany them to becoming valuable tools for the realization of the change throughout the whole process.

- Change agents networks: Similarly agreed upon by both CM and DT, however CM offers a clear, structured and proven body of knowledge on how to set-up ambassadors' programs, to increase success rate and utilization of their potential and providing valuable support in the realization of the change; change agents can be instrumental in the context of continuous change.

- Resistance management tactics: Same as above, CM encompasses tactics to address, as well as effectively use resistance of impacted groups and turn it into information, adjustments to the change approaches.

• ADKAR and individual change: CM sees change as the sum of the individual changes which is powerful mindset when setting up a plan; each individual goes through the change differently, passing through each ADKAR phase at their own pace, needing more or less time and potentially different CM tactics; CM ensures that the CM plan takes everybody along, not only the individuals that are technically inclined, risk-friendly and are open to change, but also the less technically-savvy, risk-adverse and less change open.

• Change Readiness: CM provides a valuable tool for assessing the individuals' change readiness at different points in time in their ADKAR stages; even though DT is very fast-paced and allows for little adaptation to change, assessing the readiness provides great insight on which tactics to use with priority based on the impacted groups most immediate needs.

The identified opportunities for CM evolvement, to better support DT in the future:

• Involvement of employees: DT provides practical and effective ways for the participation of the impacted groups in the creation of the change; even CM alludes to it as a nice-to-have, DT goes all the way, leveraging the knowledge, experience and ideas of the individuals that are closest to the organization's products or services.

• Retaining and hiring talent: While CM focuses on developing and enhancing the skills mainly through training, DT adapted to hiring the necessary talent, due to time constraints and lack of the necessary skills within the organization; this infuse of talent is a highly efficient tactic.

• Collaboration: DT leverages all the knowledge it has access to and creates new partnership, both internally, i.e. fostering collaboration between employees, business units, IT and business, management and front-line, and externally, with customers, competitors, allies, start-ups, etc.

• Infrastructure as support: DT provides valuable suggestions on how to leverage office architecture, technology and processes to support DT which can be powerful additional tools for CM.

• Continuous change: DT see change as iterative and continuous, given the pace at which technology evolves; CM needs to adapt its models to accommodate for an environment where not only one or a limited number of change are taking place, but where changes succeeding rapidly and unexpectedly.

Opportunities for both CM and DT to reach increased positive outcomes:

• Data and KPIs: Organizations setting up KPIs and leveraging their data have proven more successful, however both CM and DT would benefit from setting up CM related data sets and KPI collections; better KPIs and data lead to better insights of gaps, effectiveness of CM measures and informed decision making.

• Organizational culture: Both DT and CM see culture as an essential factor for change; culture can either facilitate or impede change, however it is hard to change and changes at a different pace than DT is realized; DT and CM have only recently turned their focus towards the critical role of culture.

Conclusions

This paper has provided an overview of the CM practices that have proven successful in the context of DT and compared them to Hiatt's CM theoretical model, highlighting the similarities and differences. Being the first study to do this, it validates the most effective practices, gives suggestions of how DT can be realized more successfully through available CM practices, as well as how the theory of CM can be enhanced through the successful DT practices. It thus enhances both the fields of DT and CM.

Given that the narrative analysis only permitted a broader analysis of existing literature, more in-depth research is needed to identify the most effective CM measures and their effects on DC, as well as the most important aspects of DC that facilitate DT. An effective CM model would ideally handle both at the same time, allowing DT to enable a digital culture and vice-versa. The aim would be to create an organizational environment where change is seen as a given, a state of fact and equip companies to deal efficiently, with less effort and more success, with any type or number of changes in the VUCA environment.

References

Bharadwaj, A., El Sawy, O.A., Pavlou, P.A. and Venkatraman, N.V., 2013. Digital business strategy: toward a next generation of insights. *MIS quarterly*, 37(2), pp.471-482.

Buvat, J., Solis, B., Crummenerl, C., Aboud, C., Kar, K., El Aoufi, H. and Sengupta, A., 2017. *The Digital Culture Challenge: Closing the Employee-Leadership Gap. Capgemini*. [pdf] Available at:

<https://www.capgemini.com/consulting/wpcontent/uploads/sites/30/2017/07/dti_digitalculture_report.pdf.> [Accessed 28 February 2020].

Dunleavy, P., Margetts, H., Bastow, S. and Tinkler, J., 2006. New public management is dead—long live digital-era governance. *Journal of public administration research and theory, 16*(3), pp.467-494.

Fitzgerald, M., Kruschwitz, N., Bonnet, D. and Welch, M., 2014. Embracing digital technology: A new strategic imperative. *MIT sloan management review,* 55(2), p.1.

Gong, C. and Ribiere, V., 2021. Developing a unified definition of digital transformation. *Technovation*, 102, p.102217. https://doi.org/10.1016/j.technovation.2020.102217.

Goran, J., LaBerge, L. and Srinivasan, R., 2017. Culture for a digital age. *McKinsey Quarterly,* 3(1), pp.56-67.

Gürkan, G. and Çiftci, G., 2020. Developing a Supportive Culture in Digital Transformation. In: U. Hacioglu, ed. *Digital Business Strategies in Blockchain Ecosystems*. [online] Cham: Springer International Publishing. pp.83–102. https://doi.org/10.1007/978-3-030-29739-8_5.

Haffke, I., Kalgovas, B. and Benlian, A., 2017. The Transformative Role of Bimodal IT in an Era of Digital Business. https://doi.org/10.24251/HICSS.2017.660.

Halpern, N., Mwesiumo, D., Suau-Sanchez, P., Budd, T. and Bråthen, S., 2021. Ready for digital transformation? The effect of organisational readiness, innovation, airport size and ownership on digital change at airports. *Journal of Air Transport Management*, 90, p.101949. https://doi.org/10.1016/j.jairtraman.2020.101949.

Hartl, E. and Hess, T., 2017. *The role of cultural values for digital transformation: Insights from a Delphi study*. [pdf] Available at: <https://core.ac.uk/download/pdf/301371796.pdf> [Accessed 17 March 2023].

Hartl, E., 2019. A Characterization of Culture Change in the Context of Digital Transformation. In: AMCIS 2019, *Proceedings of the 25th Americas Conference on Information Systems*. Cancún, Mexiko, 15-17 August 2019.

Hiatt, J. and Creasey, T.J., 2003. *Change management: the people side of change*. 1st ed ed. Loveland, Colo: Prosci Research.

Hiatt, J., 2006. *ADKAR: a model for change in business, government, and our community*. 1st ed ed. Loveland, Colorado: Prosci Learning Center Publications.

Kotter, J.P., 2010. *Leading change: why transformation efforts fail*. Harvard business review classics. Boston, Mass: Harvard Business Press.

Kübler-Ross, E. and Kessler, D., 2005. *On grief and grieving: finding the meaning of grief through the five stages of loss*. New York: Scribner.

McKinsey & Company, 2020. *How COVID-19 has pushed companies over the technology tipping point–and transformed business forever*. [pdf] Available at: <https://www.mckinsey.com/~/media/McKinsey/Business%20Functions/Strategy%20and%20Corporate%20Finance/Our%20Insights/How%20COVID%2019%20has%20pushed%20companies%20over%20the%20technology%20tipping%20point%20and%20transformed%20business%20forever/How-COVID-19-has-pushed-companies-over-the%20technology%20tipping-point-final.pdf> [Accessed 17 March 2023].

Mergel, I., Edelmann, N. and Haug, N., 2019. Defining digital transformation: Results from expert interviews. *Government information quarterly,* 36(4), p.101385.

Osmundsen, K., Iden, J. and Bygstad, B., 2018. Digital transformation: Drivers, success factors, and implications. In: MCIS, *The 12th Mediterranean Conference on Information Systems*. Korfu, Greece, September 2018.

Shaughnessy, H., 2018. Creating digital transformation: strategies and steps. *Strategy & Leadership*, 46(2), pp.19-25.

Subramaniam, R., Singh, S.P., Padmanabhan, P., Gulyás, B., Palakkeel, P. and Sreedharan, R., 2021. Positive and negative impacts of COVID-19 in digital transformation. *Sustainability,* 13(16), p.9470.

Wokurka, G., Banschbach, Y., Houlder, D. and Jolly, R., 2017. Digital Culture: Why Strategy and Culture Should Eat Breakfast Together. In: G. Oswald and M. Kleinemeier, eds. *Shaping the Digital Enterprise*. Cham: Springer International Publishing. pp.109–120. https://doi.org/10.1007/978-3-319-40967-2_5.

Zaoui, F. and Souissi, N., 2020. Roadmap for digital transformation: A literature review. *Procedia Computer Science*, 175, pp.621–628. https://doi.org/10.1016/j.procs.2020.07.090.