

Digital organizational transformation issues, challenges and impact: A systematic literature review of a decade

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Abstract

The Digital Transformation phenomenon always tends to be complicated, ambiguous, challenging, and non-routine managerial tasks for organizations. The success rate of such digital transformation is very low due to rapid changes in technologies. Digital transformation through these technologies demands fundamental change in organization processes, technology and behavior of the people. This broad change results in different socio-technical issues and challenges. The primary objective of the study is to discover issues, challenges and impact/benefits during digital transformation, investigated by various researchers. For this purpose, a systematic literature review (SLR) as prescribed by Levy and Ellis (2005) helped in identifying the challenges of digital transformation. The articles published from 2008 to 2018 were selected and analyzed. The findings of this research reflect the importance of developing an effective digital transformation strategy in organizations. The proactive strategy regarding people, process, technology, and most importantly their alignment in the organization is found critical in executing such transformation initiative in the organization. The planned efforts regarding knowledge management also played an important role in executing and sustaining such transformation initiatives in the organizations. Moreover, value creation, operational efficiency, competitive advantage, customer relationship, and new business model emerged as a vital motivational factor and outcome for digital transformation.

Keywords: Digital transformation, digital transformation issues and challenges, systematic literature review, digital transformation benefits/impact.

In the current digital age, organizational survival depends upon transformation capabilities (Ashurst & Hodges, 2010; Berghaus, 2018). Digital Transformation (DT) is occurring at a rapid pace in public and private organizations due to disruption in market conditions along with deficiencies in organization needs and processes. It becomes a fundamental market need for the survival of the organizations. In recent decades so-called “digital transformation,” through new workplace technologies (such as Cloud, IoT, Big Data, Cloud ERP, AI, etc.) has emerged as the fourth industrial revolution (Pflaum & Golzer, 2018). The need for transformation arises due to societal, industrial and mostly because of technological advancements (Kenney et al., 2015). This board change asserts different socio-technical issues and challenges, which creates hurdles in a successful transformation project (Khan & Bokhari, 2018; Mahmood et al., 2019). Researchers, experts, and practitioners have recognized that transformation is a complex process in terms of people, process and further, and it is a challenging task (Higgs & Rowland, 2005). Earlier research shows the high failure rate of digital transformation projects. McKinsey highlights the 70% transformation failure projects (Bucy et al., 2015), which demonstrate that the majority of organizations lack this competency (Gobble, 2018). How to accomplish digital transformation is one of the challenging tasks for the senior management of organizations. There is a need for research in understanding and exploring challenges of digital transformation, as reflected in the call for papers of top quality journals such as Information Systems Frontiers, Journal of Business Research, International Journal of Entrepreneurial Behavior & Research, Business Horizons, Academy of Management Discoveries etc. The objective of this study is to get familiar with potential issues and challenges allied to digital transformation that organizations can face and how such issues and challenges can be addressed by management. Along with various issues and challenges, we need to explore DT impacts /benefits, which create motivation for the management to transform their organization digitally For this purpose, a systematic literature review (SLR) approach is employed to synthesize the various issues and challenges explored in past research findings, and ultimately digging out the most critical

ones which require additional consideration for DT success as mentioned in the past research by different authors. Further, the existing study has also a unique importance in-country context. Currently, the Ministry of IT & telecom Pakistan takes initiative “Digital Pakistan 2020”, where the government needs to transform different industries. Therefore, the current study is unique in its kind, focusing on the issues and challenges, would be productive for the senior management to plan such initiative in their organizations effectively.

What is Digital Transformation?

The term digital transformation is one of the most prevalent perspectives among consultants, managers, and researchers from the past few years. Digitization and digitalization are two terms that are closely associated, but both have different concepts. Digitization is the automation of previously established manual and paper-based work processes from analog artifact to digital format. Digitalization has a broader concept and refers to the use of digital technologies to develop a new business process to create customer value (Berghaus, 2018; Gobble, 2018). Consequently, the digital transformation relates to digitalization, where organization transformation is initiated by technological advances headed for enhancement in an organizational business process and delivers value to the customers (Fitzgerald et al., 2014).

Why Systematic Literature Review (SLR) for Digital Transformation

Over the years, researchers show that the phenomenon of digital transformation is new for many developing as well as for developed countries (Singh & Hess, 2017). New technologies such as cloud computing, big data, internet of things hold such disruptive power, which leads organizations towards new dynamics through technology leadership. Nonetheless, a recent study by (Siebel, 2017) shows that 40% of today's business would be failed in the next ten years and 70% of them will try to attempt digital transformation, but only 30% will be able to transform themselves successfully. It seems to happen, as past research illustrates a 70% failure rate for transformation. Thus, there is a severe need for practitioners to understand what issues and challenges concerning people, process, and technology arise during digital transformation, which drives towards failure. After a rigorous review, we couldn't find considerable research on digital transformation, which highlights issues and challenges to reduce the failure rate. Therefore, the focus of this search is to explore issues and challenges which contribute towards transformation failure, through a well-defined Systematic literature review (SLR) approach. The guidelines discussed by (Levy & Ellis, 2006) for conducting an effective SLR are followed. The next section will discuss the detailed SLR process adopted for this research.

SLR process for current Study

Research Question

This work addresses the following research question.

- Q1. What different issues and challenges, mentioned in the past research, are faced by the management during the digital transformation process?
- Q2. What key benefits can be achieved by the organization through Digital Transformation?

Digital Resources

Different databases are targeted for the collection of data regarding digital transformation. Diverse resources have increased the quality and projected the different perspectives from authors on similar issues. The following databases are selected:

- Science Direct
- Springer Link
- Institute Of Electrical & Electronics Engineers (IEEE)
- Emerald
- JSTOR
- Google Scholar
- ProQuest (for dissertations)

Literature Search Strings

To conduct a rigorous literature review, the selection of search strings or keywords perform a central role in search activity. Systematic review demands exhaustive coverage of existing research, which is explored through interrelated keywords on the topic of interest. According to (Cooper et al., 2009) search the literature until the required goal is achieved. For the current review

regarding digital transformation, all possible keywords are used for the literature search. Moreover, the backward and forward search approach suggested by (Levy & Ellis, 2006) is also used to make the search process more rigorous.

Backward Search

Backward search is identification and review of the references or work cited in an article (Levy & Ellis, 2006); that's why backward searching also is known as chain searching. To execute the current literature review, backward searching technique is also adopted for the identification of further research articles covering DT issues, challenges, and impacts. This study applies a backward search technique on more recently published articles (2018, 2017, 2016) from different authors such as (Khan & Bokhari, 2018; Nambisan et al., 2017).

Forward searching

Forward search means identifying and reviewing articles that cite an original article (Webster & Watson, 2002). Forward searching pays attention to the publications created after a research article is published (Levy & Ellis, 2006). The forward-searching methodology is also incorporated in the current literature review to assert more articles about DT considering the defined time frame. Through the forwarding search technique, different articles regarding digital transformation are explored, such as articles from authors, (Clohessy et al., 2017; Jovanović et al., 2017), etc. Relevant search strings and keywords for searching articles in lieu of current SLR are as follows;

- "Digital Transformation"
- "Digital Organizational Transformation"
- "Digital Transformation Problems"
- "Digital Transformation Issues"
- "Digital Transformation Challenges"
- "Digital Transformation Failure"
- "Digital Transformation Issues & Challenges"
- "Digital Transformation Impacts"
- "Digital Transformation Benefits"

Sometimes it may happen that articles found through keywords did not fully match with the research topic. So Boolean operators (i.e., AND, OR, NOT) were also used to combine more than one concept for making search accurate and more effective.

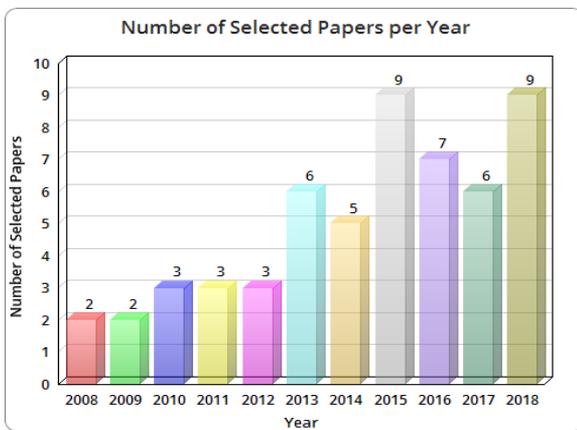


Figure 1 Number of Papers per Year

Exclusion and Selection Criteria

SLR stresses to define selection criteria for a particular research area. The researcher has to define large or focused groups of studies for review. Larger samples for border and more generalizable conclusions and focused studies for quality and the confidence that can be placed in conclusions (Cooper et al., 2009; Siddaway, 2014). In the current systematic literature review, attention is given to focused studies, where the ultimate goal is to improve the quality and

effective implication of the results for practitioners, which may result in the reduction of DT failure rate. Initially, 103 papers were found regarding digital transformation based on the defined time span. Later on, by applying specified selection criteria 55 papers (including journal articles, desecrations, and conference papers) are found suitable for the current study. Figure 1 shows the number of selected papers per year, after applying the defined exclusion and selection criteria.

To discover the most related articles for the current review the following selection criteria were adopted.

- The research papers which were i) not from impact factor journals, and ii) not found in ranked MIS journal list see (Levy & Ellis, 2006) were excluded along with one exception that highly cited papers were included regardless of their journal impact factor. Moreover, some papers are also included for review recognized by Higher Education Commission (HEC) Pakistan for the purpose to synthesize digital transformation from country-specific context.
- The only peer-reviewed conference papers are selected.
- Include only papers under review which published in the English language.
- Strictly restricted to time frame. Only those papers were selected which are published from 2008 to 2018.
- Only those papers are considered for review which has highlighted the Digital transformation issues, challenges, impacts/ benefits.

Table 1. Details of selected papers for the current study

	Title	Journal	Conferences/ Reports/Dissertations	Year
1.	"Managing emerging technology and organizational transformation: An acculturative analysis"	Information & Management		2008
2.	"Internet tools enable organizational transformation from the inside out: the Nokia Siemens Networks case"	Strategy & Leadership		2008
3.	"Disruptive technology: How Kodak missed the digital photography revolution"	The Journal of Strategic Information Systems		2009
4.	"Leading the transformation to co-creation of value"	Strategy & Leadership		2009
5.	"Exploring business transformation: The challenges of developing a benefits realization capability"	Journal of Change Management		2010
6.	"CEO/CIO Mutual Understanding, Strategic Alignment, and the Contribution of IS to the Organization"	Information & Management,		2010
7.	"The Digital Transformation of Healthcare: Current Status and Road Ahead"	Information Systems Research		2010
8.	"Rapid Adaptation in Digital Transformation: A Participatory Process for Engaging IS and Business Leaders"	MIS Quarterly Executive		2011
9.	"Resource fit in digital transformation: Lessons learned from the CBC Bank global e-banking project"	Management Decision		2011
10.	"Revamping Your Business Through Digital Transformation"	MITSloan Management Review		2011
11.	"Strategizing information systems-enabled organizational transformation: A transdisciplinary review and new directions"	Journal of Strategic Information Systems		2012
12.	"Digital Transformation: Opportunities to Create New Business Models"	Strategy & Leadership		2012

	Title	Journal	Conferences/ Reports/Dissertations	Year
13.	"Increasing Organizational Performance by Transforming into a Mobile Enterprise"	MIS Quarterly Executive		2012
14.	"Best Practice Insight BPM case study: IBM's Enterprise Transformation"		IBM	2013
15.	"Digital platforms as sources for organizational and strategic transformation: a case study of the Midblue project"	Journal of theoretical and applied electronic commerce research		2013
16.	"How a Firm's Competitive Environment and Digital Strategic Posture Influence Digital Business Strategy"	MIS Quarterly		2013
17.	"Digital Business Strategy: Toward A Next Generation Of Insights"	MIS Quarterly		2013
18.	"Tapping into Existing Information Flows: The Transformation to Compliance by Design in Business-to Government Information Exchange"	Government Information Quarterly		2013
19.	"Impact Research On Transformational Information Technology: An Opportunity to Inform New Audiences"	MIS Quarterly		2013
20.	"Embracing digital technology: A new strategic imperative"	MIT Sloan management review		2014
21.	"Information systems strategy as practice: Micro strategy and strategizing for IS"	Strategic Information System		2014
22.	"Digital Government Transformation and Internet Portals: The co-Evolution of Technology, Organizations and Institutions"	Government Information Quarterly,		2014
23.	"The Next Digital Transformation: From an IndividualCentered to an Everyone-to-Everyone Economy"	Strategy & Leadership		2014
24.	"Digital Darwinism and the Need for a Digital Transformation"		4th Annual International Conference on Business Strategy,	2014
25.	"Digital transformation: the material roles of IT resources and their political uses"		Doctoral dissertation, Umeå universitet	2015
26.	"The 'how' of transformation"		McKinsey Quarterly	2015

	Title	Journal	Conferences/ Reports/Dissertations	Year
27.	"Strategy, not technology, drives digital transformation"	MIT Sloan Management Review		2015
28.	"Digital transformation strategies"	Business & Information Systems Engineering		2015
29.	"Think before you act: organizing structures of action in technology-induced change"	Journal of Organizational Change Management		2015
30.	"Digital government evolution: From transformation to contextualization"	Government Information Quarterly		2015
31.	"Corporate Learning in Times of Digital Transformation: A Conceptual Framework and Service Portfolio for the Learning Function in Banking Organizations"	International Journal of Corporate Learning		2015
32.	"How An Australian Retailer Enabled Business Transformation Through Enterprise Architecture"	MIS Quarterly Executive		2015
33.	"Reflections on Societal and Business Model Transformation Arising From Digitization and Big Data Analytics: A Research Agenda"	Journal Of Strategic Information System,		2015
34.	"Effects of Digital Transformation on Organizational Performance of SMEs"	Internet Research		2016
35.	"Designing for digital transformation: Lessons for information systems research from the study of ICT and societal challenges"	MIS Quarterly		2016
36.	"How to win at digital transformation"		Forbes Insights	2016
37.	"Digital Transformation Challenges"		MCIS	2016
38.	"Bimodal IT: Business-IT Alignment in the Age of Digital Transformation"		MKWI, Germany	2016
39.	"Big Data Analytics: Understanding its Capabilities and Potential Benefits to Healthcare Organizations"	Technology Forecasting & Social Change		2016

	Title	Journal	Conferences/ Reports/Dissertations	Year
40.	"Organizational Transformation Towards Product-Service System: Empirical Evidence in Managing the Behavioural Transformation Process"		Procedia CIRP 47	2016
41.	"The impact of cloud-based digital transformation on ICT service providers' strategies"		eConference Digital Transformation	2017
42.	"Transition of organizational roles in Agile transformation process: A grounded theory approach"	Journal of Systems and Software		2017
43.	"Digital Innovation Management: Reinventing innovation management research in a digital world"	MIS Quarterly		2017
44.	"A reflection on information systems strategizing: the role of power and everyday practices"	Information Systems Journal,		2017
45.	"Digitalization: opportunity and challenge for the business and information systems engineering community"	Business & information systems engineering		2017
46.	"Conceptualizing Digital Transformation in Business Organizations: A Systematic Review of Literature"		In Bled eConference	2017
47.	"The Fuzzy Front End of Digital Transformation: Activities and Approaches for Initiating Organizational Change Strategies"		Doctoral dissertation, Universität St. Gallen	2018
48.	"The IoT and Digital Transformation: Toward the Data-Driven Enterprise"	IEEE Pervasive Computing		2018
49.	"Becoming Agile in the Digital Transformation: The Process of a Large-Scale Agile Transformation"		International Conference on Information Systems	2018
50.	"Understanding ICT Enabled Organizational Transformation"	Abasyn Journal of Social Sciences		2018
51.	"Managing Complexity of Digital Transformation with Enterprise Architecture"		31 st Bled eConference Digital Transformation	2018

	Title	Journal	Conferences/ Reports/Dissertations	Year
52.	"The role of digital technologies for the service transformation of industrial companies"	International Journal of Production Research		2018
53.	"Drivers of Digital Transformation in Manufacturing. The Digital Supply Chain of the Future: Technologies, Applications and Business Models"		51st Hawaii International Conference on System Sciences	2018
54.	" Digital transformation by SME entrepreneurs: A capability perspective"	Information Systems Journal		2018
55.	"Being critical is good, but better with philosophy! From digital transformation and values to the future of IS research"	European Journal of Information Systems		2018

Data Evaluation

Data collected from past research, investigated by different researchers regarding Digital Transformation issues and challenges are extracted and documented in Table 2. Table 2 highlights past work by various researchers on digital transformation, explaining issues and challenges faced by management during the transformation process.

Table 1. *Data extraction for RQ1 Digital Transformation Challenges*

Authors	c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12
(Pan et al., 2008)		✓		✓					✓	✓	✓	
(Deering et al., 2008)		✓		✓		✓				✓		
(H. C. Lucas Jr & Goh, 2009)		✓		✓	✓			✓		✓		
(Ashurst & Hodges, 2010)	✓	✓		✓	✓		✓	✓		✓		✓
(Hansen et al., 2011)		✓	✓	✓	✓	✓	✓					
(Liu et al., 2011)		✓	✓			✓		✓			✓	✓
(Besson & Rowe, 2012)		✓	✓	✓	✓		✓					
(Ward-Dutton, 2013)		✓		✓		✓					✓	
(Resca et al., 2013)		✓		✓	✓							✓
(Fitzgerald et al., 2014)	✓	✓		✓	✓		✓	✓				
(Peppard et al., 2014)		✓	✓					✓				
(Arvidsson, 2015)		✓						✓		✓		
(Bucy et al., 2015)	✓	✓	✓		✓			✓	✓			
(Kane et al., 2015)	✓	✓	✓				✓	✓				
(Matt et al., 2015)		✓		✓								
(Yeo & Marquardt, 2015)	✓	✓		✓	✓	✓			✓			
(Janowski, 2015)			✓	✓						✓		
(Majchrzak et al., 2016)		✓		✓								
(Moreno, 2016)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
(Henriette et al., 2016)		✓		✓		✓	✓			✓		
(Horlach et al., 2016)	✓	✓	✓	✓								
(Clohessy et al., 2017)		✓		✓	✓							
(Jovanović et al., 2017)				✓	✓		✓	✓		✓		
(Nambisan et al., 2017)	✓	✓	✓	✓	✓	✓						
(Marabelli & Galliers, 2017)		✓		✓								
(Legner et al., 2017)						✓	✓					✓
(Berghaus, 2018)	✓	✓	✓	✓	✓		✓	✓	✓			
(Pflaum & Golzer, 2018)		✓	✓	✓		✓						
(Fuchs & Hess, 2018)				✓			✓	✓		✓	✓	
(Khan & Bokhari, 2018)	✓	✓	✓	✓	✓		✓	✓	✓			✓
(Pucihar et al., 2018)			✓							✓		✓

Table 3. *Terminologies/ abbreviations used for identification of issues and challenges.*

c1	c2	c3	c4	c5	c6	c7	c8	c9	c10	c11	c12
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High Failure Rate	Effective Strategy	Strategic Alignment/Integration	Technological Disruption	Strategy for People role, Responsibilities, & org. Structure	Cross Functional Collaboration	Top Management Engagement	KM Strategies	Change Management	Culture	Project Team	IT Infrastructure
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The summary of past research about digital transformation key impacts/ benefits are extracted and documented in Table 4. Moreover, the study elaborates that why different organization transforms their organization digitally by highlighting DT Impacts/ benefits.

Table 2. Data extraction for RQ2 Digital Transformation Key Impacts/ Benefits, I=Impact

Authors	I1	I2	I3	I4	I5
(Ramaswamy, 2009)	✓	✓			
(Johnson & Lederer, 2010)	✓				
(Agarwal et al., 2010)	✓	✓			✓
(Westerman & Bonnet, 2015)	✓	✓	✓	✓	✓
(S. J. Berman, 2012)	✓			✓	✓
(Stieglitz & Brockmann, 2012)	✓	✓	✓	✓	✓
(Mithas et al., 2013)	✓	✓			✓
(Bharadwaj et al., 2013)	✓	✓	✓	✓	✓
(Bharosa et al., 2013)	✓	✓			
(H. Lucas Jr et al., 2013)		✓	✓		
(Luna-Reyes & Gil-Garcia, 2014)	✓			✓	✓
(S. Berman & Marshall, 2014)	✓	✓		✓	✓
(Kreutzer, 2014)		✓	✓		
(Matt et al., 2015)	✓	✓	✓	✓	✓
(Schuchmann & Seufert, 2015)	✓	✓	✓	✓	✓
(Tamm et al., 2015)		✓			✓
(Janowski, 2015)	✓	✓			✓
(Loebbecke & Picot, 2015)		✓		✓	
(Y.-Y. K. Chen et al., 2016)	✓	✓	✓		✓
(Wang et al., 2018)	✓	✓		✓	
(Buschmeyer et al., 2016)	✓		✓		
(Morakanyane et al., 2017)	✓	✓	✓	✓	✓
(Ardolino et al., 2018)	✓	✓	✓	✓	
(Liere-Netheler et al., 2018)	✓	✓		✓	
(Li et al., 2018)	✓		✓	✓	✓
(Rowe, 2018)	✓	✓	✓	✓	✓

Table 3. Terminologies used for DT Impacts/ Benefits

I1	I2	I3	I4	I5
Value Creation	Operational Efficiency	Competitive Advantage	Customer Relationship/ Engagement	New Business Models

Findings of the study

Various issues and challenges, found during research synthesis, are tabulated in Table 6, conforming to the hierarchical manner. Moreover, the table represents the frequency of each issue & challenge cited by different researchers regarding digital transformation.

Table 4. *Frequency- Explored Data for RQ1*

Identified Issues & Challenges	Frequency	Ranking
Effective Strategy (c2)	26	R#1
Technological Disruption (c4)	24	R#2
Strategic Alignment/ Integration (c3)	14	R#3
Strategy for People role, Responsibilities, & org. Structure (c5)	14	R#3
KM Strategies (c8)	13	R#4
Top Management Engagement (c7)	11	R#5
Culture (c10)	11	R#5
Cross Functional Collaboration (c6)	10	R#6
High Failure Rate (c1)	10	R#6
IT Infrastructure (c12)	6	R#7
Change Management (c9)	6	R#7
Project Team (c11)	5	R#8

Assessment of results shows that the effective strategy holds a high frequency of 26. Frequency indicates which issues/challenges frequently exist in past research. This means that effective strategy is considered as the most critical factor for digital transformation success or failure by numerous researchers. Moreover, Strategy for Technological Disruption, Strategic Alignment/ Integration, Strategy for People role, Responsibilities, & org. Structure and KM Strategies etc. are a bit less critical, respectively. Some past research by (Besson & Rowe, 2012; Henriette et al., 2016; Nadeem et al., 2018) also considers all strategic aspects of digital transformation essential for success in the current digital age. High ranked issues and challenges require more attention by management and to invest all types of resources to comply with the new necessities of digital transformation. A pictorial view is depicted in Figure 4. Further discussion about high ranked issues/challenges found so far are elaborated in the next section

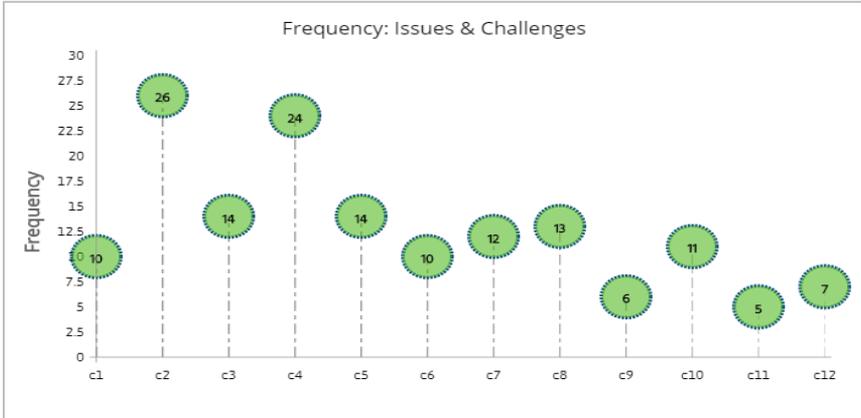


Figure 2 *Frequency: Issues & Challenges*

Through the systematic review of past literature, this work found the top five digital transformation Impact/benefits. These worthy impacts/benefits motive the management towards digital organizational transformation regardless of different issues and challenges.

Table 5. *Key Impacts/benefits- Explored Data for RQ2*

Identified Key Impacts/benefits	Frequency	Ranking
Value Creation (I1)	22	R#1
Operational Efficiency (I2)	21	R#2
Customer Relationship/ Engagement (I4)	15	R#3

Table 7 highlights the different key DT impacts/benefits and is ranked concerning their frequency. High ranked DT impact/benefits are considered vital for transforming any organization digitally. Value creation with frequency 22 is ranked top on the list. This means that most of the organizations adopted digital transformation for the value creation, followed by operational efficiency with frequency 21, which is considered the second most important factor for implementing digital transformation. Other DT benefits are increased in customer relationships, improved business models and gaining a comparative advantage. A pictorial view of key benefits is depicted in Figure 5.

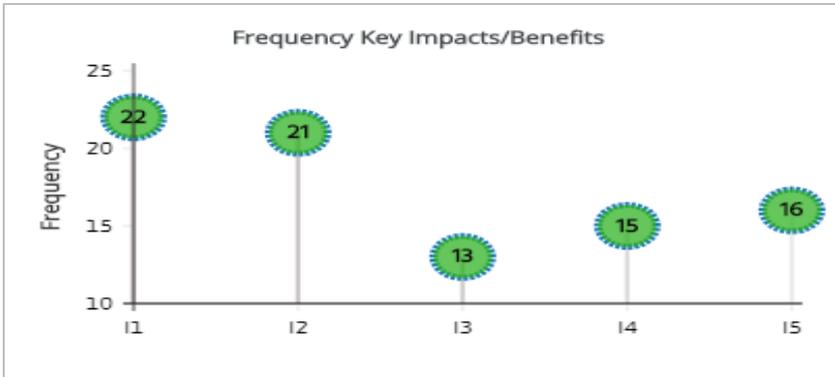


Figure 4. Frequency Key DT Impacts/Benefits

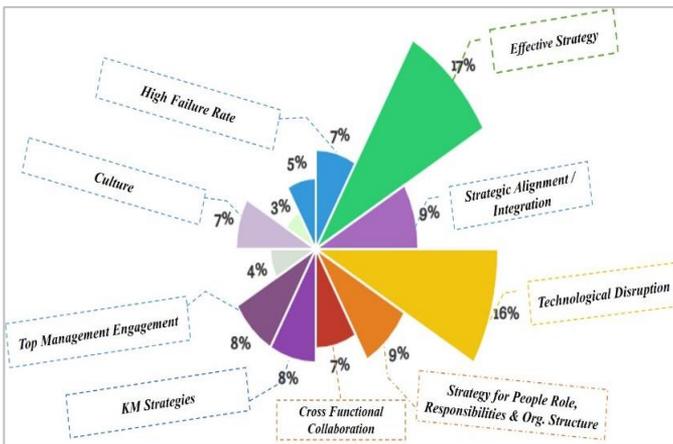


Figure 3 Explored Papers per Issues & Challenges

Discussion and Future Directions

Effective Strategy

Digital Transformation refers to how an organization transforming its core business processes, using digital technology, to improve into all areas of a business, fundamentally changing how organizations operate effectively and deliver value to customers ((Fitzgerald et al., 2014). The strategy is planned numbers of actions, guidelines to achieve transformation. In the current literature review, an effective strategy is found to be the most critical challenge that organizations

can face during the digital transformation process. Moreover, past research shows that in most cases, management is unaware of an effective strategy, and sometimes organizations don't have any strategy which covers transformation holistically ((Pisano, 2015). Furthermore, this review also identifies the lack of research regarding effective digital strategy for digital transformation. Thus, it is a need of time to explore a more grounded view of the digital transformation phenomenon with strategic perspectives.

Technological Disruption

Technological disruption means the emergence of the new technology that replaces the existing technology rendering it to be obsolete (Bergek et al., 2013). The current digital age needs of transformation arise mostly due to technological advancements. Currently, cloud computing, the Internet of Things, Big data, AI, Mobile technologies, etc. disrupt the prevailing technologies that create the need for transformation. Nonetheless, when new technologies evolve, they result in different socio-technical issues and challenges (J. Chen et al., 2019; Khan & Bokhari, 2018). To discover what strategy can be effective in handling such technological disruption seems to be an interesting research area that is needed to be explored. Additionally, current SLR also highlights the Strategy for Technological Disruption as an important issue that requires remedial strategies for management to handle such disruption effectively.

Strategic Alignment/ Integration

Digital transformation does not depend on a single strategy. It comprises upon IT strategy, IS strategy, changes management strategy, and business Strategies (Bharadwaj et al., 2013; Drnevich & Croson, 2013). For a successful transformation, the alignment of such strategies is highly significant. The current literature review also climaxes the issues of strategic alignment with a relatively high frequency of 14. Future research on alignment issues regarding digital transformation can be a unique exploration in the body of knowledge for the respective domain.

Strategy for People's role, Responsibilities, & org. Structure

Digital transformation stresses an organization to have such digital capabilities in order to change organization structure and identities. Consequently, such broad change affects all organizational departments (such as marketing, HR, IT, supply chain, etc.) roles, responsibilities, and structure, which is not an easy task to handle at rare times (Kohli & Johnson, 2011; Pflaum & Golzer, 2018). This makes the organization transformation more complex and challenging. The current systematic literature review also pinpoints such issue as one of the central factors which can change transformation dynamics, if not considered. Future research can be fruitful by focusing on developing strategies for people, roles, and responsibilities during and after organizational transformation.

KM Strategies

Knowledge management is the process through which organizations create, share, use and manage the knowledge and information to achieve organization objectives. Literature shows that in the case of digital transformation through new workplace technologies, management departments are always rare in knowledge and skill regarding new technologies and transformation processes (Legner et al., 2017). Moreover, low employee skills regarding new technologies and transformation processes create hurdles in acceptance. These types of deficiencies can drive an organization toward transformation failure. To study KM strategies and issues regarding employee skills is one of the motivating areas that is needed to be explored under the digital transformation phenomenon.

Recommendations

The findings of this study suggest the following recommendations for the organization's plan to move towards digital transformation in the future.

- The digital transformation process is just like a journey, and every journey requires a map. A successful transformation can always be driven through an updated digital strategy. Thus, the organization needs a clear vision to meet digital transformation complexities.
- Technology is the key to digital transformation, and how organizations and people interact and make use of it, pushes towards DT success. In the current digital environment, there are many new-age technologies seeing rapid growth and adoption but it's doesn't mean that the organization needs all of them for

transformation. Identification of fundamental technologies, with respect to organizational requirements, shapes more chances of fruitful outcomes.

- Past research shows that minimal people love to change. DT, by its nature, upsets many people within the organization. It transforms people's roles and responsibilities. Therefore, organizations always resistant to change. However, at the time of change adoption, not changing is riskier for organizations to create uncertainty. Hence, handling employee pushback during digital transformation is one of the vital elements for organizations to be successful in the current digital age.
- Digital transformation takes time, but the organization has to think of digital-first. Top leadership engagement has a vibrant role in starting transformation magnitude. Moreover, leaders should not sit back during any stage of DT. The continuous monitoring and support from top tiers make transformation projects more contented and attainable.

Research Implications

Digital transformation is here, and many organization is transforming themselves to take advantage, but DT high failure rate is not encouraging. Most of the organizations have the means to digitize; it doesn't mean that they are ready. Organization gets failed because they are unable to handle different issues and challenges during digital transformation. This current study provides awareness and understanding by representing various issues and challenges found in past literature, which guides managers what are the most critical factors ascends during digital transformation. Therefore leaders from the organizations can design remedial strategies to grip these complex issues/ challenges before such a situation arises. Moreover, current research also explored the different benefits of digital transformation, which motivates leaders from various organizations to implement DT in their organizations to gain competitive advantage.

Research Limitations

We grounded this literature review on top-ranked impact factors journals related to digital transformation, including the list given by (Levy & Ellis, 2006) on highly rated information systems journals and peer-reviewed international conferences. Admittedly, 55 articles selected from 103 articles after applying selection and exclusion criteria from this prominent area seem a moderate sample. This study could be more valuable if we include more journals, conferences, and practitioner-scientific outlets from different fields to increase the sample size and extent this review to different sectors. Moreover, current research could be further stretched by including more related keywords, selecting the broader time frame and enhancing inclusion and exclusion criteria.

Conclusion

This study has provided a detailed analysis of themes, challenges, and impact/benefits from 55 articles, which have been published from 2008 to 2018. Systematic literature review (SLR) the approach is used to find issues, challenges, and benefits which are investigated by different researchers. The total number of key identified issues and challenges is 12. Further, these issues and challenges are ranked based on their frequencies. Effective strategy with the highest frequency is found to be the most critical factor for digital transformation during the respective time frame. Additionally, identified issues and challenges are Strategy for Technological Disruption, Strategic Alignment/ Integration, Strategy for People role, Responsibilities, & org. Structure, KM Strategies, Top Management Engagement, Culture, Cross-Functional Collaboration, High Failure Rate, IT Infrastructure, Change management, and Project Team. During the current literature review, 17% of such articles are explored, which highlights that the complexity of digital transformation projects is mostly due to the lack of effective strategy. Moreover, 16% of papers also demonstrate the rapid technological change has a substantial contribution towards transformation failure. For further papers regarding issues and challenges are shown in Fig 5. Current SLR also climaxes the digital transformation impact/ benefits investigated by past researchers. These are value creation, operational efficiency, competitive advantage, customer relationship, and new business models. Value creation and operational efficiency are reflected as one of the vital factors with high frequency for the management to motivate towards digital organizational transformation. Furthermore, the above mentioned high ranked issues and challenges require additional energies from management for successful digital transformation. These findings are beneficial for understanding complexities regarding the digital transformation phenomenon. Leaders from

different organizations, who want digital transformation in their organizations, can plan about identified issues and challenges to reduce the risk of transformation failure.

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