

# **Role of Digital Leadership in Achieving Digital Readiness Through Organizational Optimization.**

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## **Abstract**

Study determination is to deliver a framework for overpowering the obstacles headed digital readiness of the organizations, which are not prepared for upcoming industrial difficulties. Interrelated theoretical lens of contextual leadership theory and strategic alignment model along with data analysis of 279 top manager from IT sector in Pakistan. Result examination shows that organizational optimizations including top management commitment, strategic planning and inter-organizational collaboration mediates the relationship between digital leadership and firm's digital readiness. Study consumes significant professional and theoretic suggestion that no matter how strong is the leadership, means through which the desire outcome could be achieve should not be ignore.

## **Key words**

Digital leadership, big data strategic planning and Strategic alignment model.

## **1. Introduction**

Global trade analysis through the lens of contextual leadership theory acknowledges that leader's art of behaving according to the context is in demand like never before. Industry is approaching towards fourth industrial revolution that is branded by digitalization of business process. G7 countries comprises of Canada, EU, France, Germany, Italy, Japan, UK and US issued a signed declaration with a vision to place technology at the heart of global efforts to digitalize outdated paper-based systems from global trade to serve the customers effectively and efficiently MP (2021). UK digital secretary Oliver Dowden said G7 countries want to establish a convincing vision that how technology should support and enhance societies in the digital age. All the G7 countries have agreed to prioritize digital competition for digital revolution, developing framework addressing domestic reforms for digital transformation of organizations and collaboration among governments and stakeholder to support digital development (MP, 2021).

### **1.1. Research Problem**

Highly active and responsive capabilities are observed in smart organizations. Survey based on hundreds of firm shows that the organizations, which are digitally ready to encounter the future demand of fourth industrial revolution earned 16% extra than the average net profit margin of the relevant industry (Weill & Woerner, 2018). Organizations which are not digitally ready to encounter future demands of fourth industrial revolution are most likely to suffer dramatically or even replace by agile competition and new start-ups (Weill & Woerner, 2018). This specific problem is challenging existence of all those organization which are not digitally ready. So pragmatic researcher should derive a frameworks, based on which organization can make a forward move towards digital readiness in true sense for meeting the future demand of industry 4.0 and can align themselves with G7 countries vision regarding digitalization. McAfee, Brynjolfsson, Davenport, Patil, and Barton (2012) claimed that in future successful firm will be those which are digitally ready. Awan et al. (2021) claimed that getting equipped digitally required alignment at strategic level, strategic alignment model also stresses that strategic alignment should be there for achieving the desire outcome (Henderson & Venkatraman, 1992). In current study scenario, desire outcome is digital readiness of firms involved in manufacturing and its export or import. Tijan, Jović, Aksentijević, and Pucihar (2021) has identifies some barriers including lack of vision, strategy, coordination and collaboration whereas success factors were also identified including actively shaping future strategies (strategic planning), clear vison, inter-organizational collaboration and digital leadership. Tijan et al. (2021) has explored the barrier and their potential remedial factors but a quantitative survey study is required to generate the generalizability of these factors. Most important success factor they have identified is digital leadership. Anak Agung Sagung and Sri Darma (2020) and Kane, Phillips, Copulsky, and Andrus (2019) claimed that digital leadership is all about transformative vision, forward locking and collaboration. Anak Agung Sagung and Sri Darma (2020) also claimed that digital leader add value in what we do, which represents it strategic mindset. Strategic mindset represents strategic planning of the leader that where the organization is and where it should be.

## **1.2. Research Importance**

G7 countries also prioritize collaboration among governments and organizations to support digitalization. Having focussed on inter-organizational collaboration current study support the argument claimed by Wasono and Furinto (2018) and Klein (2020) that digital leadership has the capability for promoting collaboration which will be helpful for the organizations to achieve inter-organizational collaboration for achieving digital readiness as prioritized by G7 countries.

Rodgers, Hunter, and Rogers (1993) claimed that achieving desired outcomes become achievable when top management is committed towards the desire outcome, which is digital readiness of the firm. Digital leader with influential characteristic (Kane et al., 2019), generating and bosting top management commitment should be the centric goal of digital leadership for achieving bigger objective of firm digital readiness.

## **1.3. Research Objectives**

All these factors including strategic planning, inter-organizational collaboration and top management commitment will create an alignment at all level of organization and digital leadership should address these goals mentioned below for achieving firm digital readiness which is the bigger organizational goal.

1. Investigate the mediating role of top management commitment on the relationship between digital leadership and firm digital readiness.
2. Investigate the mediating role of big data strategic planning on the relationship between firm digital readiness.
3. Investigate the mediating role of inter-organizational collaboration on the relationship between digital leadership and firm digital readiness.

## **2. Literature review**

### **2.1. Contextual leadership theory, social cognitive theory and strategic alignment model**

Multiples factors play their role simultaneously for instance Johns (2006) presented contextual leadership theory that provides omnibus context including environmental factors and discreate context comprising organizational culture & climate whereas Bandura (2002) in social cognitive theory describe organizational culture and climate as leaders responsibility. Transforming culture and climate is a social change and leader has to face so many challenges but with the high level of self-efficacy, leader will handle each and every challenge smoothly, Bandura (2002) claimed that leader will have high level of self-efficacy if leader's personal attributes are closely linked with the desire outcome. Whereas contextual leadership argue that leader must act according to the context (Oc, 2018). Context of current study is digital readiness of the firms to meet future demands of industrial 4.0, which mean leader should promote a digital culture in the firm. Achieving firm digital readiness leader would design goals which would also be digital centric. Based on these contextual grounds digital leadership is closely linked with the context. With high self-efficacy digital leaders will design digitally centric strategic planning, develop top management commitment towards digitalization and inter-organizational collaboration for firm digital readiness.

Designing digital centric strategic plan, developing top management commitment and inter-organizational collaboration for firm digital readiness are the choices which emerges from the context of current study for creating synergy and strategic alignment at strategic level (Henderson & Venkatraman, 1992). Henderson and Venkatraman (1992) attempted to proposed strategic alignment model which is the most acknowledged and documented model for creating alignment at strategic level (Wang, Zhou, & Jiang, 2008). Strategic alignment model has three streams of research, first stream explores the inter correlation between strategic choices for management guidance and the proposed strategic alignment model was operationalized by Avison, Jones, Powell, and Wilson (2004); Jerry N Luftman (1996); Jerry N. Luftman, Lewis, and Oldach (1993). Further development in terms of dimensions, domains and level of strategic alignment model was introduces in second research stream which was led by Goedvolk, Van Schijndel, Van Swede, and Tolido (2000); (Maes, 1999); Maes, Rijsenbrij, Truijens, and Goedvolk (2000). Philosophy of strategic alignment model is expanded in its third stream of research studies by Sun and Lai (2011) and Neubert, Dominguez, and Ageron (2011) with an expansion in strategic alignment model towards inter-organizational domain.

Current study also focusses on inter-organizational collaboration, digital leader will design digital centric strategic planning, boost top management commitment towards digital readiness and with collaborative capabilities digital leadership will encourage inter-organizational collaboration not only for self-digital readiness but also for providing digital support to other organization as it will be one of the major future challenges in agile competition.

Multiple theories are provoked simultaneously in a given scenario which should be reflected in pragmatic researches for minimizing the gap between academia and practice which would result in fruitful theoretical

contribution towards body of knowledge. It would be interesting to observe interplay among contextual leadership theory, social cognitive theory and strategic alignment model.

## **2.2. Digital leadership, organizational optimization and digital readiness**

Kane et al. (2019) argued that Digital era has allowed flexibility and distributed workplace along with other challenges like conflict among change makers and employees with a traditional mindset furthermore pace of performing business activity has increased to great extent. A survey of 3300 respondents claimed that leader should have digitalize vision, forward looking (planning and strategy) and a wide range of soft skills such as collaboration and team building (Kane et al., 2019). Essentially digital leader is about consumption of organizational resources for advancement or accumulating value in what we do, that signifies a leader's strategic mindset (Anak Agung Sagung & Sri Darma, 2020). Strategic mindset represents leader's strategic planning and where the organization is and where it should be.

Question like where the organization is and where it should be is answered by omnibus context of contextual leadership theory (Oc, 2018). Omnibus context creates a link between digital leadership and strategic planning because digital leader has a digitalized and transformative vision with forward looking with clear vision and strategy (Kane et al., 2019). Recent studies also support that vision is mandatory for articulating strategic planning (Persson, 2020).

Current study argument regarding articulating strategic planning together with top management commitment is supported by contextual leadership theory because the persuasive capabilities along with clear vision that where the firm is and where it should be, digital leader should be guided through omnibus context (where) of the contextual leadership theory. Situation will demand leader's specific responsive behaviour suitable for that situation and the context "where" will demand digitalized, transformative vision and forward looking (vision and strategy) capabilities of digital leader to articulate digital centric strategic planning for firm digital readiness.

Successful achievement of objectives (firm digital readiness) without major sacrifices is possible with a strong commitment of top management. Organizational goals must be set and aligned by leader for successful achievement of organizational objectives (Dubey, Gunasekaran, & Ali, 2015). Goals alignment at all organizational level also attract operations and strategic domain literature (Graves, Sarkis, & Gold, 2019). Endorsement or organizational goals at all level also comes from strategic alignment model (Goepp & Avila, 2015). Digital leader should have the goal for developing or bosting top management commitment, through its influential characteristic (Kane et al., 2019) in order to achieve organizational objective which is firm digital readiness. Rodgers et al. (1993) Claimed that high level of top management commitment accelerate and exaggerates the firm progress toward organizational objectives which is firm digital readiness in current scenario. Top management commitment is crucial for technological changes, technological implementation for digital readiness get accelerated and exaggerated by top management's believes and knowledge (El-Kassar & Singh, 2019). Furthermore, mediating role of top management commitment is already discussed by Gunasekaran et al. (2017) in digitalized context.

Knott and Thnarudee (2020) acknowledges the importance of inter unit coordination. Current study applies the concept for inter-organizational collaboration to promote digitalization. Promoting digitalization is now crucial to survive in near future because organizations cannot achieve complete and comprehensive vision of digitalization until and unless all the vendor and suppliers become fully digitalize. Therefore, for consuming full benefits of digitalization digitalized firms need to pass on their experience and expertise to their vendors and suppliers. This phenomenon of inter-organizational collaboration will enhance firms (vendors and suppliers) digital readiness. Yang, Huo, Tian, and Han (2021) has also discussed the inter-organizational collaboration with suppliers for addressing supplier opportunism (Yang et al., 2021).

On the contrary, there prevails a vacuum for system upgradation in every organization or even economies. Firm which was previously supposed to provide collaboration and support to their vendors and suppliers firm should also demand or request for such inter-organizational collaboration to whom they are vendor or supplier.

Inter-organizational collaboration may be served in several ways. For instant, digitalized firm should collaborate with partner firm for the development of digital centric processes. Digitalized firm can offer their information system to their partners firm keeping all the security and privacy concern into consideration. Even they can only provide professional expertise for implementation and modification of information system as consultants.

All these efforts of inter-organizational collaboration will increase digital readiness of partners firm in which digital leader has a crucial role to perform for this collaboration due to collaborative characteristic and digitalized vision of digital leadership. Based on these arguments below hypothesis are proposed.

H<sub>1</sub>: Digital centric strategic planning mediates the relationship between digital leadership and firm digital readiness.

H<sub>2</sub>: Top management commitment mediates the relationship between digital leadership and firm digital readiness.

H<sub>3</sub>: inter-organizational collaboration mediates the relationship between digital leadership and firm digital readiness.

### 2.3. Framework



## 3. Methodology

Current study adopts pragmatic deductive approach and uses survey strategy to collect data from 279 senior personnel in FMCG sector operating in Pakistan. Unit of analysis for current study is organization.

### 3.1. Measures

Seven-point Likert scale is utilize for measuring constructs through scales adapted from different studies. Scales consisted of four items is utilize to measure digital leadership, this scale was adapted from Zeike, Bradbury, Lindert, and Pfaff (2019). Inter-organizational collaboration is measure by adapting a three items scale from Wamba et al. (2017). Top management commitment is measure using five items scale, strategic planning is measure using seven items scale and digital readiness is measure using a six items scale.

## 4. Data Collection

Data is collected from a IT firms in Pakistan who are involve in dealing with some of the G7 countries.

Data collection is progressed through visiting district offices in Pakistan or through email and telephonic contact in some cases. We demanded senior manager to respond to our questionnaire and then we used snowball sampling by demanding respondent to discuss us to another possible respondent.

## 5. Results and Discussion

### 5.1. Reliability and validity

Reliability and validity for the constructs is confirm by applying confirmatory factor analysis. Indicators whose reliability was not up-to acceptable level was not consider for further analysis. All the results related to reliability of the constructs are presented below in below table 1 including the convergent validity.

Table 1. Reliability and convergent validity

Constructs	Indicators	Indicators Loading	Indicators Reliability	Composite Reliability	AVE
Digital Leadership	1	0.816	0.609	0.712	0.752
	2	0.783	0.826		
	3	0.823	0.279		
	4	0.850	0.823		
Top Mgt Comm	1	0.740	0.749	0.792	0.751
	2	0.742	0.971		
	3	0.812	0.637		
	4	0.895	0.951		
	5	0.853	0.874		
Inter-organizational collaboration	1	0.808	0.704	0.739	0.823
	2	0.803	0.719		
	3	0.860	0.946		
Strategic Planning	1	0.917	0.879	0.862	0.872
	2	0.927	0.853		
	3	0.954	0.816		
	4	0.865	0.792		
	5	0.809	0.552		
	6	0.781	0.682		
	7	0.920	0.761		
Digital Readiness	1	0.863	0.862	0.761	0.771
	2	0.751	0.816		
	3	0.876	0.873		
	4	0.813	0.729		
	5	0.765	0.812		
	6	0.861	0.726		

### 5.1.1. Discriminant validity

Following Fornell and Larcker (1981) Discriminant validity is also authorised in below table 2 where the diagonal value represents the square root of AVE while all the underlying values represent the correlation among the latent variables.

Table 2. Discriminant validity

Construct	1	2	3	4	5	6
1- Digital Readiness	<b>0.736</b>					
2- Top Management Commitment	0.638	<b>0.726</b>				
3- Inter-organizational collaboration	0.579	0.684	<b>0.836</b>			
4- Digital Leadership	0.452	0.291	0.651	<b>0.751</b>		
5- Strategic Planning	0.757	0.628	0.430	0.523	<b>0.719</b>	

## 5.2. Endogenous variable variation

$R^2$  resulting through PLS procedure mirrored in table 3, which reflects the disparity in underlying variable because of further underlying variables.  $R^2$  intended at digital readiness is noted as 0.628 that reflect 62.8% of variation because of top management commitment, big data strategic planning and inter-organizational collaboration and digital leadership. Organizational factors, which includes big data strategic planning, top management commitment, and inter-organizational collaboration has a value of  $R^2$  as 0.761, 0.692 and 0.513 which signify 76.1%, 69.2% and 51.3% of deviancy is produced by digital leadership in these organizational factors congruently.

Table 3. Endogenous variable variation

Endogenous variables	R Square
Digital Readiness	0.628
Inter-Organizational collaboration	0.513
Digital Leadership	0.000
Strategic Planning	0.761
Top management commitment	0.692

## 5.3. Discussion

Existing study projected a model based on organizational optimization in which top management commitment, inter-organizational collaboration and strategic planning is aligned for firm digital readiness through suggested hypothesis based on research objective. After a detail data examination, response to research question has been address.

Digital leadership influence all the three organizational aspect comprising top management commitment, big data strategic planning and inter-organizational collaboration through a similar pace as its  $\beta$  value for each organizational factor is much closed to each other. These organizational dynamics including top management commitment, big data strategic planning and inter-organizational collaboration effects digital readiness.

## 5.4. Hypothesis testing

Partial least square (PLS) structural equation modeling is use to detect endogenous variable deviations then path coefficient through PLS procedure. Path coefficient significance was originate through bootstrapping procedure at 5000 runs to check whether the outcomes are significant and found that all the hypotheses are accepted by a significance level of 0.001 as showed in table 4 below.

Another stage after confirming the mediation is to check the level of mediation aimed at which indirect effects is considered and found out that the indirect influence is highly significance in all cases whereas the direct effect of digital leadership on digital readiness is not significance due to lower  $\beta$  value. This designates full mediation of organizational factors including top management commitment, strategic planning and inter-organizational collaboration between digital leadership and digital readiness.

Linking results with past study is not completely possible as there are not sufficient number of studies for linking the results.

Table 4 Hypothesis Testing

Relationship	Direct Effect	Indirect Effect	Total effect	t-value	P-value	Proposed Hypothesis	Result
Digital Leadership -> Top management commitment -> Digital readiness	0.083	0.381	0.464	4.225	0.001	H2	Accepted
Digital Leadership -> Strategic Planning -> Digital readiness	0.083	0.697	0.780	7.242	0.001	H1	Accepted
Digital Leadership -> Inter-departmental collaboration -> Digital readiness	0.083	0.416	0.499	3.421	0.001	H3	Accepted

## 6. Conclusion

Study is conducted for existence of those firms that are not in group of future ready organization. Study has projected a model through which, factories can be transform into smart factories for their existence. Data is collected commencing 279 top managers of the IT firms in Pakistan that. Structure equation modeling is applied with bootstrapping for mediation test, outcomes displays that organizational optimization including top management commitment, big data strategic planning and Inter-organizational collaboration is crucial for achieving firm digital readiness. These consequences derived through mediation test fulfil research objectives of examining the mediating part of these organizational optimization including top management commitment, big data strategic planning and inter-organizational collaboration Without addressing these organization factors digital readiness will not be achieve in its true sense and will remain a dream.

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## 9. Biography

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