Digital Transformation framework - Excellence Of Things (EOT) for Business Excellence

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PhD/DBA in Digital Transformation

Date: 20 Sep 2019

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Dr.Mahsud@eotSphere.com

Purpose of this presentation is to provide awareness and encourage fump start' on Digital Transformation based on EoT framework.

My T-Shirt =

$$K < \sum_{i=1}^{n} X_i$$



Where: K= My Knowledge X = Your Knowledge





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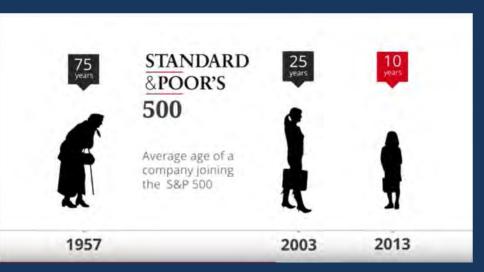








https://www.smartinsights.com/social-media-marketing/social-media-strategy/new-global-social-media-research/





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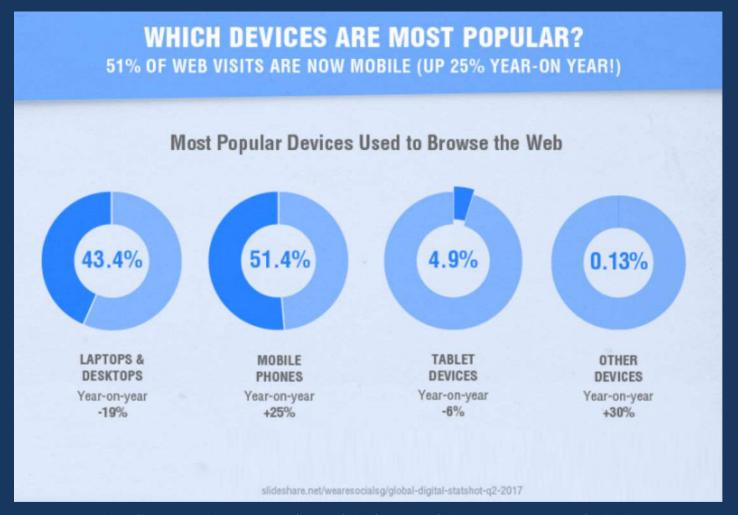
Digital Customers

Digital Customer- Digital customers use digital channels — Web, mobile and social — to consume content, engage with brands and complete a transaction (Gartner Inc., 2018).





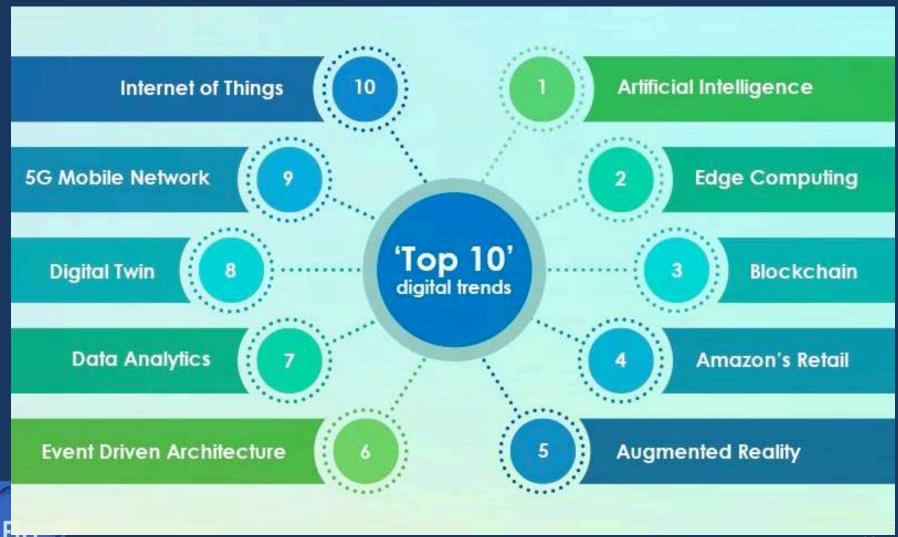
https://www.salesforce.com/au/blog/2016/0 3/research-reveals-how-smbs-use-digitalto-engage-customers.html





https://www.digitaldoughnut.com/articles/2017/november/digital-marketing-trends-for-2018

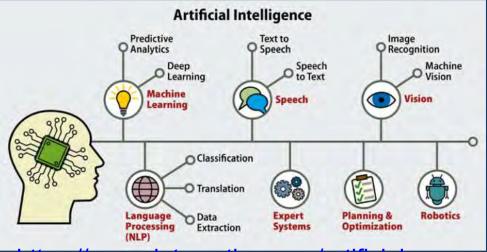
Technology Trends / Digital Transformation Capabilities



Artificial Intelligence - Al

Many digital firms are adopting AI; cognitive computing - a combined system capable of understanding human imagination and emotion and capable of managing enormous data; and machine learning – an algorithm to enable software to improve its performance. Regardless of types of AI, AI solves day-to-day business challenges based on available data, algorithm, and training

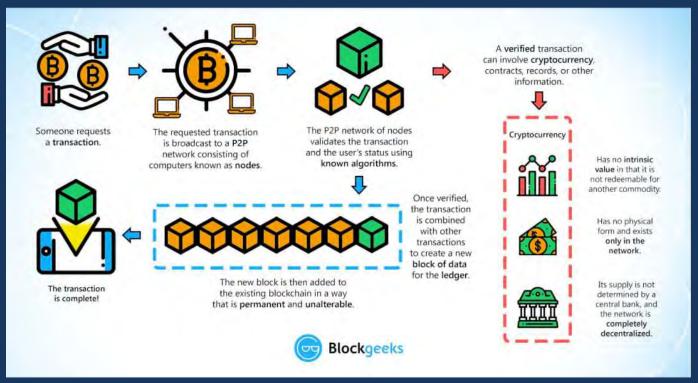
mechanism.







Blockchain contains a chain of verifiable blocks consists of data, current block hash, and previous block hash. Hash is like our fingerprint that is almost unique. Blocks are always secure as changes or temptation is nearly impossible due to the nature of hashing and 'proof of work' mechanism utilized in the blockchain.





Mobile Technology

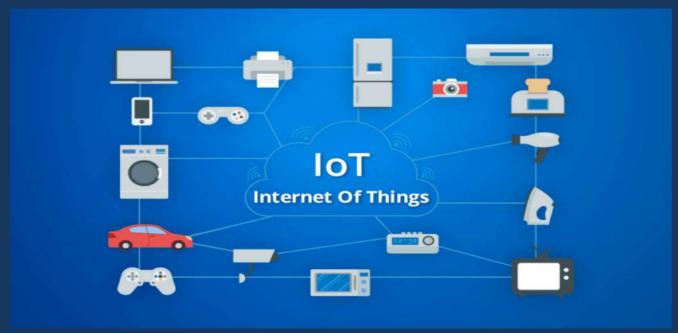
Mobile technology includes portable devices such as smartphones, tablets, and wearables that provide users the functionality and connectivity. Digital firms have adapted to the dynamic patterns of consumer behavior and gradually shift towards mobile communication channels to minimize mobile disruptions.





Internet of Things - IoT

IoT is a system of the interconnected computer or portable devices, mechanical such as washing machine sensors and digital machines such as energy sensors, any other objects, or even people. All of these objects or 'things' have unique identifiers (UIDs) and are able to transmit data over the internet or mobile system automatically.





Introduction – Cont'd Big Data

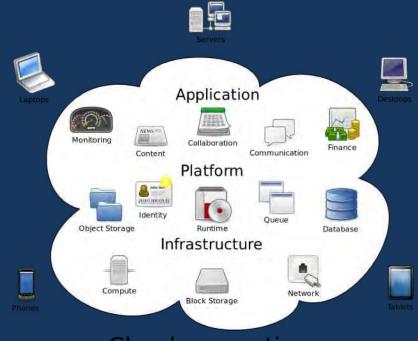
While mobile technologies provide in accessing data, Big data - a large volume of structured or unstructured data - is profoundly transforming the way businesses compete, operate and analyze the data generated from mobile technologies.





<u> https://www.edureka.co/blog/big-data-applications-revolutionizing-various-</u>

Cloud has its particular infrastructure, platform, and applications. However, the current trend is to move the digital firm's software and infrastructure systems to the cloud.





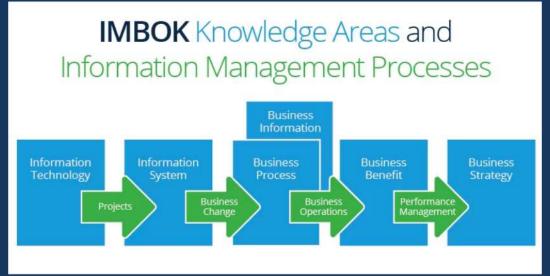
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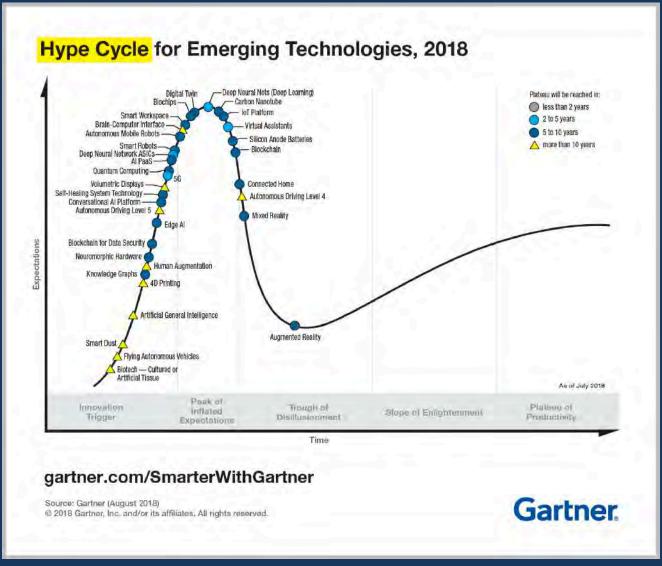
Information Management

The emergence of information technology has changed the traditional strategies of business process improvement even now the internet is independent of strategy (Dinkar, 2005) and information management was emphasized in all organization during the 1980s (Boykin, 2017). IM is one of the pre-requirements of DT because DT engages the extraction and exchange of data from other capabilities such as IoT, AI, RPA, blockchain and the analysis as well as a conversion of that data into actionable

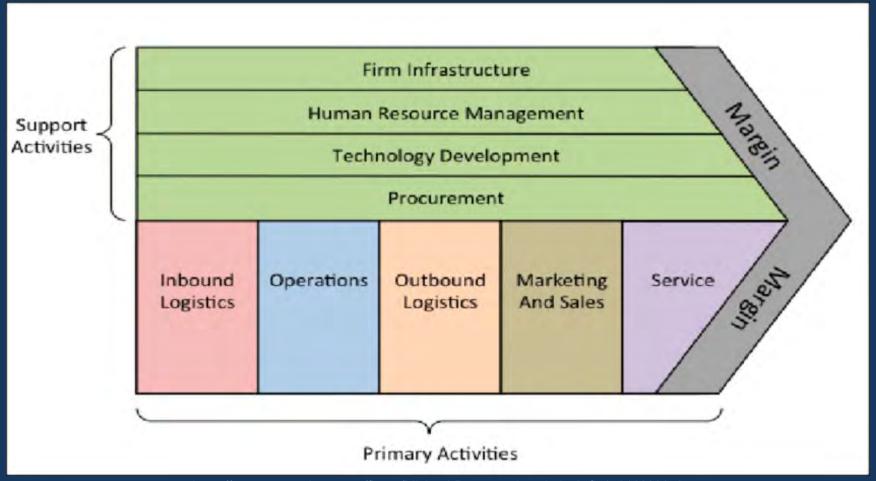
information.













https://www.researchgate.net/figure/Michael-Porters-value-chain-6_fig1_316889653

Introduction

Digital customers are the center point of digital disruption due to their ever increasing expectation of better and consistent quality, faster delivery and cheaper products. Borowski defines digital customer experience that includes only those experiences through a digital interface such as computer and other portable devices. For instance, digital customer experiences includes researching a product online or finding out a nearest store's location using a mobile app (Borowski, 2015).

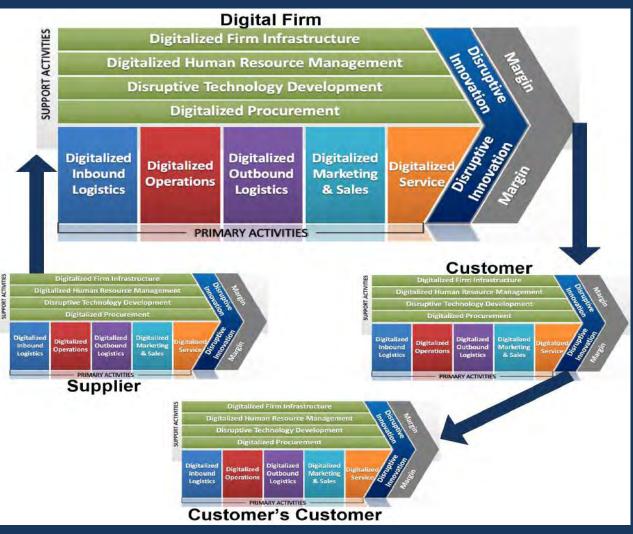


Figure 8: Digital Value Chain

- Digital Transformation (DT) is the way of radical digitalizing primary activities including logistics, operation, marketing & sales and service; as well as support activities consisting corporate infrastructure, human resource management, technology and procurement for enabling business with innovative technology either to disrupt others in the ecosystem or protect digital firm itself from disruption (Dissertation Page# 52).
- The entire *digital ecosystem* is disrupted due to disruptive innovation.



 Digital firms shall transform the all functions of Porter's value chain regardless of primary or support activities with the help of DT capabilities such as mobile technologies, Big data, cloud computing, IoT and artificial intelligence.



DT Capabilities

<u>Mobile Technologies</u>: Mobile technology includes portable devices such as smartphones, tablets and wearables that provide users the functionality and connectivity. Digital firms have adapted to the dynamic patterns of consumer behavior and gradually shift towards mobile communication channels to minimize mobile disruptions.

<u>Big Data</u>: Big Data can analyse structured data like database content, semi-structured data like log files or XML (Extensible Markup Language) files and unstructured content like text documents or web pages or graphics.

<u>Cloud computing</u>: It is an on-demand utilization of computing resources such as processor, storage, network over internet.

<u>Internet of Things (IOT)</u>: IoT is a system of interconnected computer devices, mechanical and digital machines, objects, or people having unique identifiers (UIDs) and able to automatically transmit data over internet.



DT Capabilities

<u>Artificial Intelligence (AI)</u>: AI is transformational technology capable of performing tasks like human intelligence, for instance visual perception, speech recognition, decision-making, and translation between languages.

<u>RPA</u>: AI's another branch, RPA is software or a "robot," configured to capture and interpret applications for processing a transaction, manipulating data, triggering responses and communicating with other digital systems.

<u>Blockchain</u>: Information on a blockchain is shared ledger around the digital world i.e. the records it retains are actually open and simply certifiable whereas temptation is nearly impossible. Once any data is recorded inside the blocks of blockchain, it becomes impossible to change or temper that.



• In order to achieve outstanding quality, organizations incline to the implementation of DT which is a great means of achieving *business excellence* (BE) in 21st century.



Figure 14: Business Excellence Transformation

Business Excellence— According to Ionica, A., Baleanu, V., Edelhauser, E., & Irimie, S. (2010)

"Excellence is the state or quality of excelling. Particularly in the field of business and erganization, excellence is considered to be an important value, and a goal to be pursued".

• Inspired from *IoT's* "of the things" concept, DT based excellence framework, "EoT – Excellence of *Things*" can be developed that also utilizes frameworks, platforms, services and best practices related to DT and BE for adding value in digital firms.



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Problem Statement

General Problem

 The existing core Business Excellence (BE) frameworks are very generic in nature 'with various weaknesses such as too sophisticated <u>assessment criteria</u>, excessive <u>paperwork</u>, <u>cumbersome procedures</u>, and a lack of focus <u>which have limited its use in practice'</u> (Dahlgaard, Chen, Jang, Banegas, & Dahlgaard-Park, 2013, p. 519).



Problem Statement - Cont'd

General Problem

 While Digital Transformation (DT) is virtually overlooked in all other European and American BE frameworks. So, getting BE award for any digital firms may be tougher.

% of IT/ Telecom and other industries award winners (2005-2015)

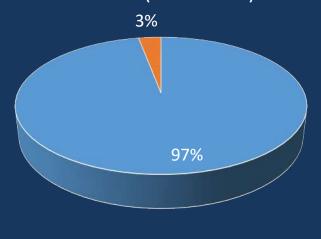




Figure 3: Percent of industries-wise award winners in Demine Prize, Baldrige & EFQM



Problem Statement – Cont'd

Specific Problem

 The existing core BE frameworks can be implemented in any digital or non-digital firms regardless of industries. However, digital firms stay behind in the competition because the core BE frameworks are not focusing intensively on DT. This same fact is revealed in the following Figure-1 and Figure-2 (Baldrige Performance Excellence Program, 2015).

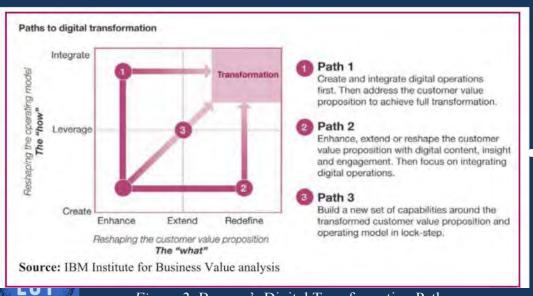


Problem Statement – Cont'd

Specific Problem

Figure-4: 3 Famous BE Frameworks' # of Award Winners (2005-2015)





• In other words, digital firms won very negligible number of BE awards.

- On the other hand, COBIT5 is very widely used IT Governance framework and it is also being used as corporate governance framework in many digital firms (ISACA, 2013a).
 - In such situation, an DT based BE framework, known as EoT, may assist digital firms to add even more value to their business.

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Purpose of Research

- The purpose of the quantitative study is to explore the meaning of Excellence of Things for Digital Firms and to study different elements of DT based BE through questionnaire.
- The study outcome might provide a DT (Digital Transformation) based BE (Business Excellence) Framework for Digital Firms.



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Research Methodology

- The is done with Delphi method
- Instrument is created and validated by the expert panel themselves through several stages and process (Sekayi & Kennedy, 2017).
- Delphi four-round is applied to develop the instrument and validate both of the instrument and response.



Research Methodology – Cont'd

- Round 1 –Brainstorming with open ended questions on the topic
- Round 2 Presentation of the list of statements to the expert panel (Appendix-B)



- Round 3 Presentation of the final DRAFT questionnaire with feedback to the panel for endorsement (Appendix-C)
- Round 4 Presentation of FINAL
 - Questionnaire (Appendix-D)



Research Methodology - Cont'd

The following questions are also asked to the participants:

- RQ1. What does EoT, DT based BE framework, mean for digital firms?
- RQ2. What are the things that drive digital firms to <u>accept</u> <u>EoT</u>?
- RQ3. How CoT, LoT and DoT enable EoT in digital firms?
- RQ4. What are the aspects of EoT in regard to <u>add value to</u> the business of digital firms?

<u>CoT</u> refers to Corporate-entrepreneurship of Things within a large business. Corporate entrepreneurship focuses one corporate leadership, strategy, mission and vision, fair treatment etc.

<u>LoT</u> refers to Lean of Things that reduces waste in order to reduce the cost and satisfy the customer requirements. LoT also focuses on lean philosophy and tools like Kaizen.

<u>D#T</u> refer to the set of data generated from mobile technology, cloud computing, AI, IoT, RPA, EDEkchain and any other techniques to gain business insight.

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Rational for Use of the Methodology

- Qualitative research method is usually 'the <u>phenomenological</u> perspective seeks to determine the meaning of a <u>construct</u>' (Willis, 2015).
- In this study, the answers of the questions are sought which fit the phenomenological research type because the researcher firstly <u>explores</u> the meaning of <u>EoT for digital firms</u>.
- That is why; this study is completed with Qualitative Study along with <u>Delphi methods</u>.
- Delphi method is <u>utilized to explore</u> an area of future thinking such as EoT.



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Meaning of EoT in the Context of Digital Firm

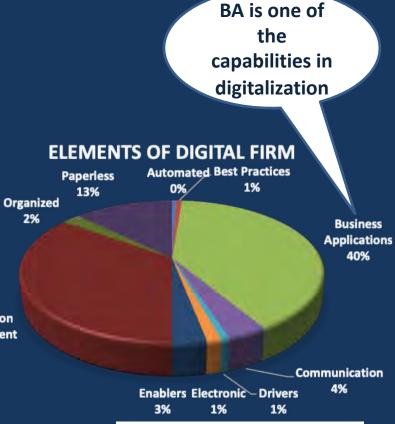


Figure 26: Meaning of Digital Firm in Word Cloud

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IM is one of the capabilities in digitalization

Informaiton Management 35%



Meaning of EoT in the Context of Digital Firm
 Survey participants' opinions regarding digital firms:

Participants	Statements on Excellence on digital firms
P06	Some way. The most important thing for business excellence for a digital
	company is to give the best product and after sell service to the customers and
	clients.
P10	Sure, as per the correct and accurate data and information whatever the
	decision is going to be taken that leads the business to the excellence.
P13	As IM is foundation of semi-automated or fully automated business process so
	it can lead to business excellence in terms of faster activity as well as quality
	service.



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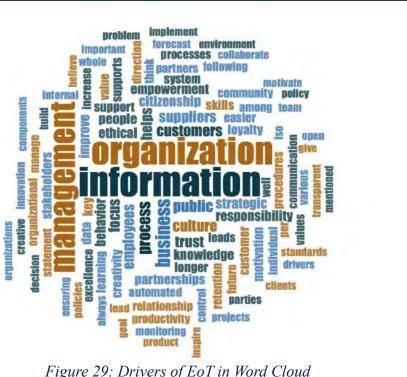
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Drivers of Digital Firms to Accept EoT







- Driver of Digital Firms to Accept EoT
 Participants' comments on Drivers of EoT
- 'Operational data' enables both people and process in a digital firm to work simultaneously (P01) while IM is a mediator between individuals and organizational learning to drive towards EoT (P02) that leads an organization to learning and innovation culture (P03). IM also turns an organization to more productive (P06) and culture of trust as well as employee empowerment (P08). Digital firms also enhance organizational sustainability by providing a clear direction, optimizing various processes and procedures and ensuring quality services (P12); and by providing right information to the stakeholders and by reducing operation **EOT**cost (P11). (Dissertation Page# 117)

- Driver of Digital Firms to Accept EoT
 - Drivers and enablers relationship based on participants comments

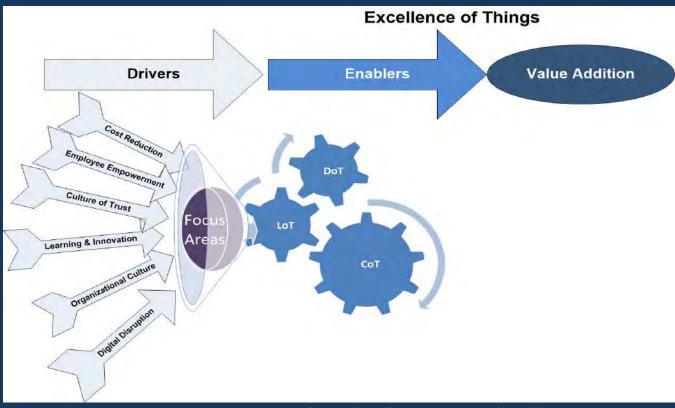




Figure 31: Relationship of EoT Drivers and Enablers

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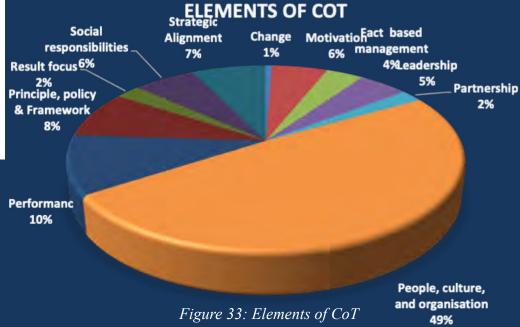
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• EoT Enablers in Digital Firms - CoT – Corporate of Things.





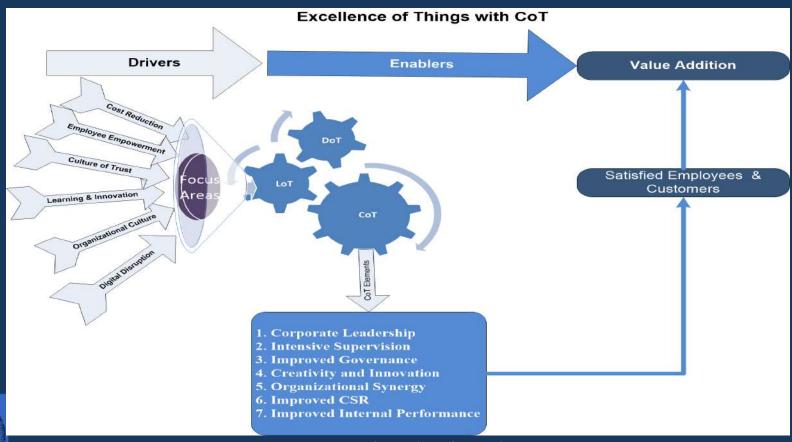


- EoT Enablers in Digital Firms CoT Corporate of Things
 - **Survey Participants' comments on CoT**

I). (Dissertation Page# 120-121)

CoT as an enabler may deliver excellence and add value to the business in digital firms by maximizing company potentials, strengthening corporate leadership (P01); improving supervision and entrepreneurship (P02); creating transparency in IM (P03); improving governance (P03); improving CSR (P07); executing strategy in systematic way (P08) that achieves organizational goals (P11) and enhance internal performance (P12) – that in turn motivates employees for creativity and innovation and establishing better culture and morale (P05); 'bridging' business and other resources (P06) for organizational synergies

- EoT Enablers in Digital Firms CoT Corporate of Things
 - **Relationship of Elements of CoT**





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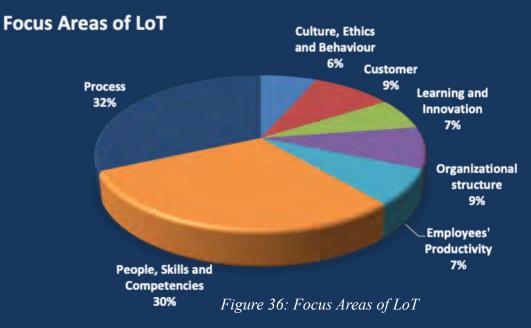
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• EoT Enablers in Digital Firms - LoT – Lean of Things



Figure 35: Focus Areas of LoT in Word Cloud

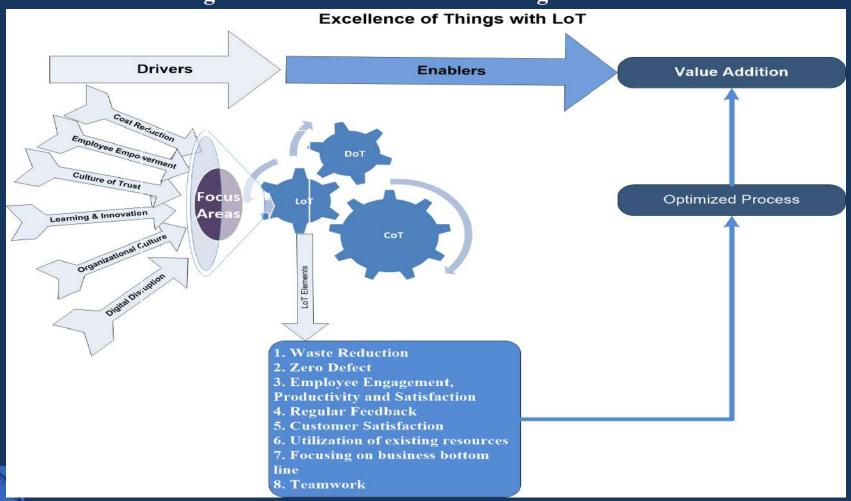




- EoT Enablers in Digital Firms LoT Lean of Things
 - > Participants' Comments

LoT as an enabler may deliver excellence and add value to the business in digital firms by minimizing waste (P04, P09) and achieving zero-defects (P08, P12); increasing employee engagement, productivity and satisfaction (P01, P06); reducing cost of running business through improving employees' skills, utilizing modern information systems (P11) and taking employees regular feedback (P02, P07); analysing customer requirements in understandable-way (P10, P12); making good use of existing resource (P06); increasing quality of service (P07); focusing on bottom line of business (P12) – that in turn increases organizational sustainability through teamwork and optimizing process (P03, P05).

• EoT Enablers in Digital Firms - LoT – Lean of Things



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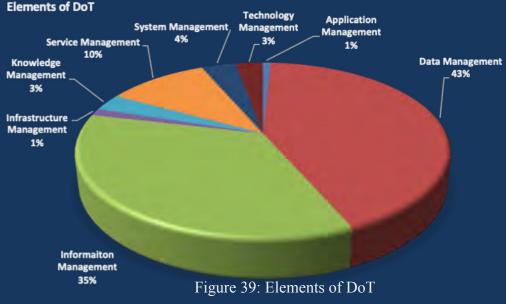
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• EoT Enablers in Digital Firms - DoT – Data of Things



Figure 38: Elements of DoT in Word Cloud

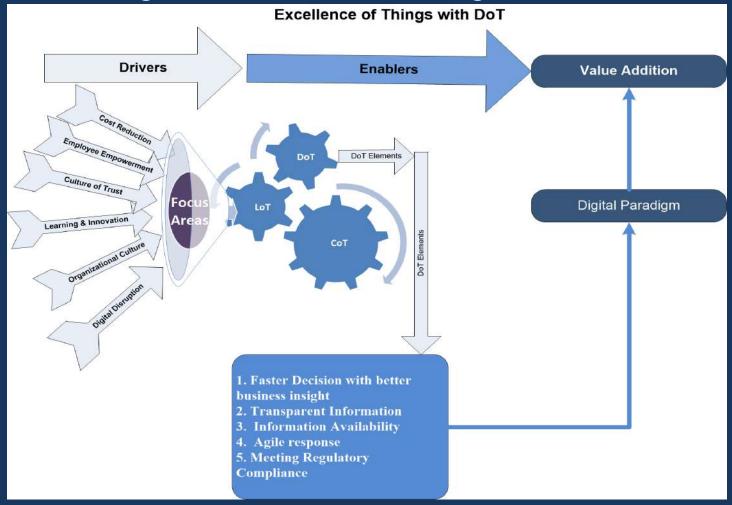




- EoT Enablers in Digital Firms DoT Data of Things
 - **Participants Comments on DoT**

DoT as an enabler may deliver excellence and add value to the business in digital firms by meeting strategic objectives (P03) through providing fact-based decision making on transparent information at the right time (P12), getting insight of information (P12) and securing information (P01, P03, P05, P08); making information available all the time (P12); responding to the business immediately in agile-way (P02, P03, P11); meeting regulatory compliance (P07, P12); and by making organization more sustainable (P03, P04, P11, P12) – that in turn changes digital paradigm too. Dissertation Page# 128

• EoT Enablers in Digital Firms - DoT – Data of Things





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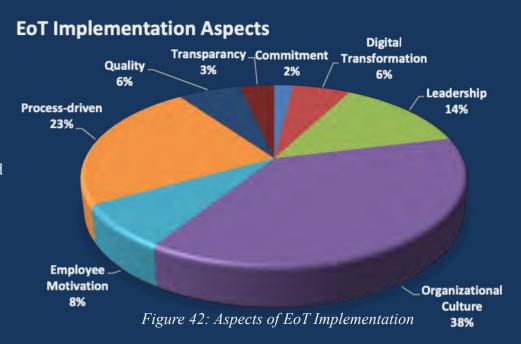
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• Aspects of EoT in Regard to Add Value to the Business of Digital Firms



Figure 41: Aspects of EoT Implementation in Word Cloud





Aspects of EOT in Regard to Add Value to the Business of Digital Firms

EoT should be focused for successful implementation to add value to the business in digital firms by seeing the aspects as holistic approach to cover end-to-end business (01); mapping digital strategy accordingly (P02) and integrating CoT, LoT and DoT (P04). The participants also argue that EoT implementation requires strong visionary leadership (P02); commitment from management (P01, P09); motivated workforce (P02); transparent communication (P02); secured computing (P07) for digital transformation (P09); faster requirements analysis for customer satisfaction (P11); process-driven and technology oriented systems (P12). Dissertation Page# 132



Aspects of EOT in Regard to Add Value to the Business of Digital Firms

By integrating CoT, LoT and DoT, the digital firms will get motivated workforce, optimized process and satisfied customers as shown previous figures (Figure-33, 36 & 39). The relationship of drivers, integration of three enablers and their final output can be shown in the following figure (Figure-43):

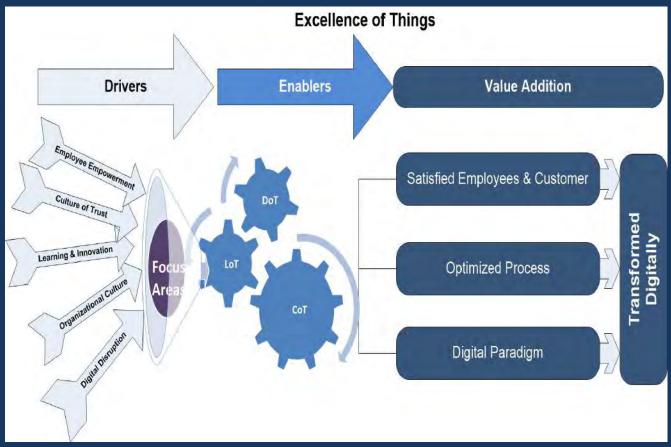


Figure 43: Relationship of Drivers, Enablers and their output



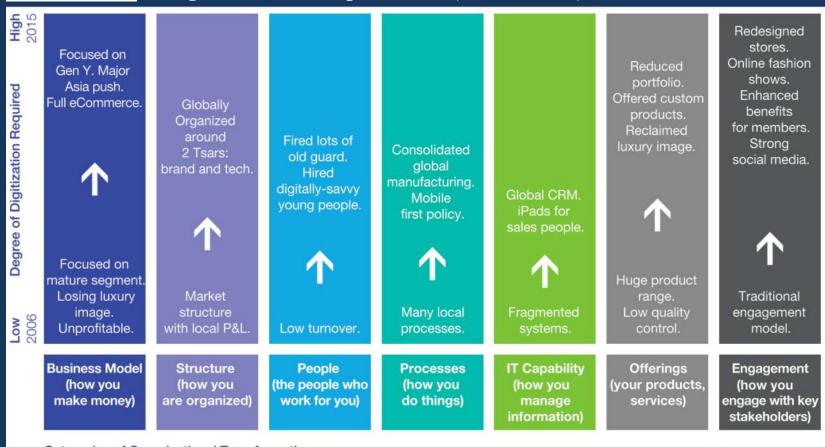
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• Digital Transformation based Excellence of Things (EoT) Framework – Seven Types of Digital Models as per Wade (Wade, 2015).



Categories of Organizational Transformation

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Figure 2: The Digitization Piano Applied to Burberry

• Digital Transformation based Excellence of Things (EoT) Framework – further extended based on literature review and Figure-42

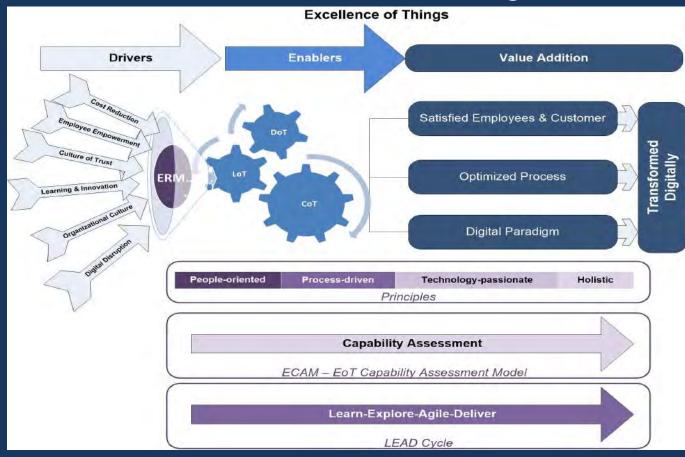
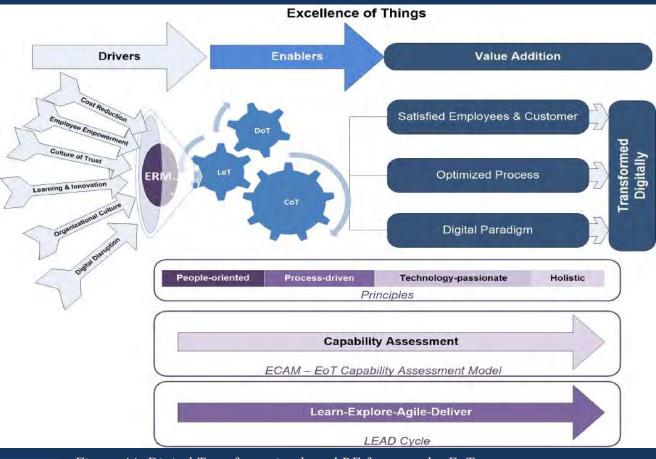


Figure 44: Digital Transformation based BE framework - EoT

- EoT has two kinds of elements or components in its framework – 'core' and 'non-core'.
- The integrated 4 (four) 'core elements' are Principles, ERM (EoT Reference Model), ECAM (EoT Capability Assessment Model) and LEAD (Learn-Explore-Agile-Deliver) implementation cycle



 Digital Transformation based Excellence of Things (EoT) Framework – further extended based on literature review and Figure-42



'Non-core' elements are

- Drivers -varies due to nature and size of digital firms,
- Enablers varies based on circumstances and
- Result or value addition varies due to interaction of drivers, enablers and other inputs.



Figure 44: Digital Transformation based BE framework - EoT

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• Digital Transformation based Excellence of Things (EoT) Framework – Principles

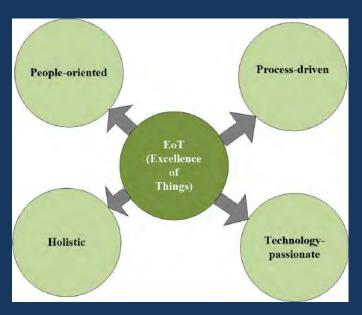


Figure 45: Principles of EoT

- <u>Principle-1:</u> People-oriented 'People, Culture and Organization' are the top-most priority in the digital firm as people are the main resources that run the entire system.
- <u>Principle-2:</u> Process-driven Process acts as mediator between the people and the product. People run the process; and process also help people to add value in business.
- <u>Principle-3:</u> Technology-passionate People oriented and process driven digital firm requires technology to transform the digital firms in order to compete in the market and satisfy customers.
- Principle-4: Holistic Being 'Holistic' is the key aspect of addressing all functional areas of the digital business transformation framework. Finally, with the help of DT, overall business improves together and by utilizing people, process and technology in holistic fashion (Angell & Corbett, 2009).



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Digital Transformation based Excellence of Things (EoT) Framework –
 EoT Reference Model - ERM

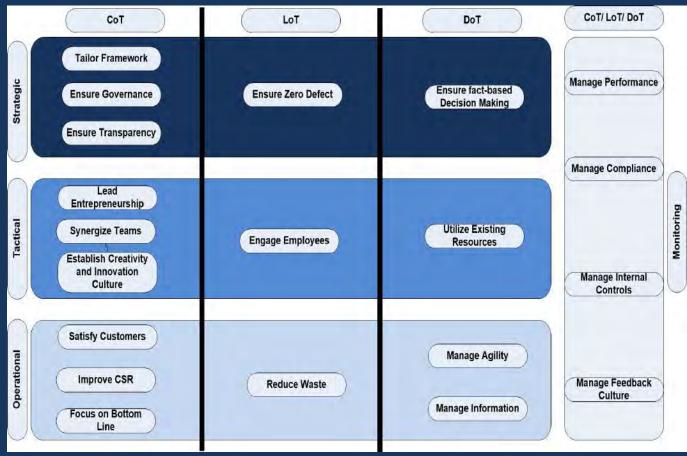


Figure 46: EoT Reference Model

- ERM is the <u>heart of</u>

 <u>DT based BE</u>

 <u>framework, EoT.</u>
 - ERM shows the relationship among building blocks of digital transformation or focus areas as identified by survey participants depicted in Figure-34, Figure-37 and Figure-40; enablers (CoT, LoT, DoT) as represented in Figure-31 and layers.



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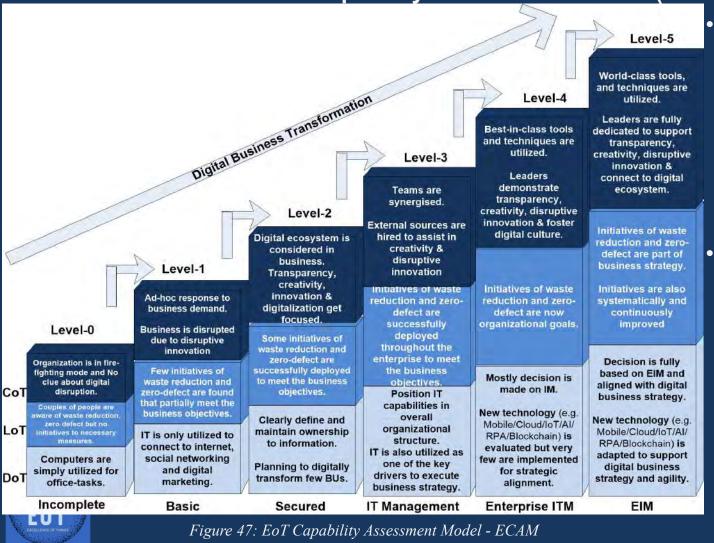
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Digital Transformation based Excellence of Things (EoT) Framework –
 EoT Capability Assessment Model (ECAM)



- Like other capability model, ECAM performs similar assessment on each focus area that are the building blocks of the digital transformation
- transformation
 ECAM provides a
 way to gauge the
 performance, and
 identify the
 improvement
 factors of each
 focus area so that it
 can pave the way
 for DT based BE,
 EoT (ISACA,
 2013a).

Digital Transformation based Excellence of Things (EoT) Framework –
 EoT Capability Assessment Model (ECAM)

Score	Meaning	% of Score	Description
N	Not achieved	0% to 15%	There is little or no evidence of achievement of the defined focus area.
Р	Partially achieved	15% to 50%	There is some evidence of an approach to, and some achievement of, the defined focus area.
L	Largely achieved	50% to 85%	There is evidence of a systematic approach to, and significant achievement of, the defined focus area.
F	Fully achieved	85% to 100%	There is evidence of a complete and systematic approach to, and full achievement of, the defined focus area.

- A focus area or building block cannot move to the next level unless it achieves 'L' or 'F' at the existing of the level.
- the focus area separately for going ahead in the journey of digital transformation and achieving DT based BE, EoT.

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Digital Transformation based Excellence of Things (EoT) Framework –
 Learn-Explore-Agile-Deliver - 'LEAD' Implementation Cycle



Figure 48: Learn-Explore-Agile-Deliver Cycle

- L = 'Learn' consists of getting aware of focus area/ initiatives and its connection with Digital Ecosystem;
- E = 'Explore' includes gathering in-depth info and analysis of gap;
- A = 'Agile' consists of ensuring agile actions identified on gap analysis; and
- D = 'Deliver' includes taking measure to disruptive innovation.
- These stages are iterative process that continuously rotates clock wisely.



Digital Transformation based Excellence of Things (EoT) Framework – Learn-Explore-Agile-Deliver - 'LEAD' Implementation Cycle

Agile Explore Learn Get aware of Ensure agile actions Gather In-depth info initiatives and its Stages identified on gap & analyze connection with analysis gap Digital Ecosystem Analyze current Document plan, state, determine procedures and **Objectives** future state and the team charter gap

Apply lesson learned and best practices

Optimize output for Digital **Ecosystem** and continually innovate

Take measures to

disruptive

innovation

Deliver

Scopes

- Understand organizational culture
- Understand digital drivers and trend
- Understand digital ecosystem and related risk profile
- Prepare simple digital strategy

- Review gap in regard to CoT, LoT and DoT
- **Identify focus** areas
- Assess trending technologies that impact the business
- Apply descriptive, predictive and cognitive analytics
- Refine objectives and/or deliverables in internal and external approaches
- Review and update system as required
- **Emphasis on Agile** methodologies either for operation or projects

- Monitor and control the output
- Take 'breakthrough' approach for further improvement and innovation
- Ensure collaboration with Digital Ecosystem

Outcomes

One-page digital strategy & Roadmap

Gap report & Strategic **Objectives**

SMART agile goals

Digitally transformed Focus Area(s) or Business Regardless of the types of the building blocks or focus areas the LEAD cycle can be applied for anyone of them.

• Digital Transformation based Excellence of Things (EoT) Framework – Learn-Explore-Agile-Deliver - 'LEAD' Cycle for 'Tailor Framework' Focus Area

Stage	Learn	Explore	Agile	Deliver
State Description	Get aware of context of digital firm	Get in-depth details of connecting other focus areas and its connection in digital ecosystem	Ensure agile action items as found in gap analysis	Take measures in such a way that the tailored framework initiates disruption
Objectives	Document plan, process, procedures and team charter	Analyze current state, determine future state and the gap	Apply lesson learned and best practices; and slice the tasks in doable groups like sprint	Optimize and continually improve the tailored framework.
Scope	Understand organizational culture. Understand interaction of this focus area with others and with CoT, LoT and DoT. Understand digital drivers and trend. Understand digital ecosystem and related risk profile.	Review gap in regard to CoT, LoT and DoT Identify focus areas Assess trending technologies that impact the business. Apply descriptive, predictive and cognitive analytics if applicable and see the impact on business model due to is customization.	Review and update framework as required. Consider the 'framework' building as a small agile project.	Monitor and control the output Take 'breakthrough' approach for further improvement and innovation. Ensure collaboration with stakeholder and digital ecosystem.
Outcomes	Detailed Requirements and Risk Analysis	Gap analysis report with SMART goals.	Detailed doable objectives and deliverables	One-page digital strategy

- As each of the
 focus area is
 having different
 criteria and are
 under different
 enablers or layers;
 related activities,
 measurement
 method, analysis,
 implementation
 steps and results
 are also different.
- However, LEAD cycle helps to achieve DT based BE, EoT to add value to the business.

Table 6: Detail of Tailor Focus Area

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Conclusion

- After analysing the participants responses, EoT is <u>designed and developed</u> with the help of few 'core' and 'non-core' elements.
- The 'core' elements are Principles, ERM with focus areas or building blocks, ECAM and finally LEAD Cycle whereas the 'non-core' elements are Drivers, Enablers and Value Addition.
- EoT can also be simply implemented in short period of time with few steps such as identify non-core elements i.e.
 - 1) identify the drivers,
 - 2) define enablers and classify them with CoT, LoT and DoT,
 - 3) define the result as business value addition; then identify the 'core' elements
 - 4) strict to EoT principle,
 - 5) build ERM based on required focus areas
 - 6) verify the interrelationship between other frameworks' elements and other focus areas by mapping focus areas,
 - 7) check the current status with ECAM and finally
 - 8) apply LEAD Cycle for each focus area or combined related focus areas.



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Recommendations

Future Research:

- The interrelationships among the <u>various aspects</u> of the EoT framework might be examined based on 'quantitative' data.
- Entire EoT framework can be reinvestigated in the light of quantitative research paradigm to see whether the data produces the same result i.e. same EoT framework.
- A <u>case-study</u> can be done to see EoT also works in practical field.
- EoT might also be tested on <u>specific function</u> such service management, software construction, any small business unit for organizational excellence instead of very broad and holistic approach.



Recommendations

Suggested Questions:

During developing EoT, the following research questions arise but were not answered due to the limitation of the study:

- 1. Is there any <u>association of drivers and enablers</u> on business value addition via EoT?
- How the <u>focus areas correlated to each other?</u> At what degree they effect business value addition via EoT?
- 3. What are the <u>challenges to the EoT based digital</u> <u>transformation</u> in digital firms?



Recommendations

Interesting Hypotheses for Future Research:

Based on the study and recommendation of the further research, there could be few hypotheses for future research such as:

- 1. Digital ecosystem and digital firm's competitive advantages will <u>influence</u> it to utilize DT based EoT model.
- 2. Cost-reduction, employee engagement and customer value proposition will <u>influence senior leadership team</u> to implement EoT.
- 3. Market competition will influence to implement EoT.
- 4. Greater enthusiasm on digitalization will influence a digital firm to implement EoT.



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