RESEARCH ARTICLE

SYSTEM THINKING AND METHODOLOGICAL MANAGEMENT APPROACHES FOR BUSINESS ORGANIZATIONS IN NIGERIA AGAINST COVID-19

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Manuscript Info

Abstract

Due to the recent COVID-19 pandemic that has plagued nations and crippled great economies. There is need for managers to tactically and swiftly find alternative ways to survive, as businesses around the world are declaring bankruptcy. Due to the inability of the business to survive and pull through this COVID-19 crisis. There is need for business owners to adopt system thinking methodological approaches in managing the situation during and after this crisis is over. The purpose of this paper is to identify the different strategy thinking methodologies that businesses can adopt during these COVID-19 related crisis. Specific objective is to differentiate and showcase the supremacy of BSGM methodology over some selected strategic thinking methodologies in general management.

Introduction:-

According to Ackoff, (1990), system thinking is not a function of its individual interaction performance but the inter-performance relationship of the parts that exist on how well the parts fit and work together. Simply put, system thinking is the approach applied in viewing, analyzing, and tackling events, problems or issues. Literally, system thinking views a problem from a system perspective and not as individual issues. Ackoff, (1990) made a car illustration to buttress the idea of system thinking concept. The argument is based on the product of individual parts assembled together and added that if there is improvement in the performance of the individual components, there is little or no guarantee that it will result to an overall improvement in system performance. Ackoff, (1990) argued that improvement of performance of the independent parts will not necessarily improve the overall performance of the car when assembled together.

System thinking is further defined as timely recognition of the characteristics of the competition field and seeing opportunities that competitors are unaware of. Strategic thinking creates competitive advantage through recognizing and strengthening activities that create unique values for the customer. This work is done through understanding the rules of the market through creativityand accountability according to (Feyzollah Zabihnia emran1, 2015).

However, according to Wikipedia, Complex Adaptive Systems (CAS) are special cases of complex systems. They are complex in that they are diverse and composed of multiple, interconnected elements. They are adaptive in that they have the capacity to change and learn from experience. But when comparing complex adaptive system with system thinking. An opinion website defined System thinking as a method of critically thinking which allows you to analyze the relationships between the system's parts in order to understand a situation for better decision-making According to (Study.com, 2018).

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Similarly, Complex Adaptive Systems (CAS) are systems made up of components (agents) that interact with one another according to a set of rules. Bar-Yam and Stacey (2018), systems are complex by nature and adaptive in that they have co-evolutionary characteristics, that is, they depend on the system learning. The intrinsic dynamic nature of complex systems requires them to have capacity to adapt, and this is fundamental for their survival. The evolution of the system is the result of interactions between its agents, where each of them acts in response to the behavior of the other agents in the system ensuring it retains its own dynamism. Stacey (2019), the behavior of each agent influences and is influenced by the behavior of the system as a whole. CAS learn and evolve, using an adaptive approach that is fundamental to their survival, processing information, and constructing schema, based on what they have experienced.

However, from Ackoff (1990) perspective, the improvement of the performance of connectedness of how the parts fit and work together enhance overall performance improvement achievement. System thinking is mostly relatable to events, problems or activities that Ackoff car analogue illustrated, which noted that the maximum output performance of a vehicle is in synchronization of its part connectedness working together as individual parts, but in groups to produce the highest level of performance. From Ackoff 's (1990) perspective, a system is not only powered by internal forces only, but by both internal and external forces working for or against the efficiency of the car. System thinking has been described using various theories and models, one of which is explained in the diagram below. The essence of the car illustration is to explain that the performance of a business is dependent on the collective performance of its sub activities, task and operational pillars that keeps the business in business.

Purpose of the paper:
The purpose of this paper is to identify the different strategy thinking methodologies that businesses can adopt during these COVID-19 related crisis. Specific objective is to differentiate and showcase the supremacy of business survival growth model (BSGM) methodology over some selected strategic thinking methodologies in general management.

Organization of the paper:
The paper is structured into four sections. Section 1 clarifies and describes the concept of systems thinking. Section 2 explains why systems thinking is used. Section 3 explored comparative analysis of methodological approaches to system thinking. Section 4 discusses the results of comparative analysis of the 3 methodological approaches to system thinking on business and religious organizations. While, Section 5 concludes and describes the application of preferred methodology 1 to system thinking to manage COVID-19 crises in business and religious organizations in Nigeria.

Section 1: Conceptual clarification of system thinking
System Thinking Theory and Model:
Based on(Study.com, 2018)which explained system thinking as a major departure from the old way of business decision-making in which you would break the system into parts and analyze the parts separately. Supporters of system thinking believe that the old way is inadequate for our dynamic world, where there are numerous interactions between the parts of a system, creating the reality of a situation. Illustrating systems thinking ideology is to examine the interactions of component parts in a system. This reveals larger patterns in the system. By seeing the patterns, it is easy to understand how the system works. If the pattern is good for the organization, decisions can be made to reinforce it. But if the pattern does not work for the organization, decisions can be made to show changes in the pattern.

Liedtka (2017) argued that there are five features adopted in strategic thinking. These are**:**
Systemic approach:
Strategic thinking is formed based on a systemic attitude. A strategic thinker should create a complete system of values in his mind and understand the relationship between its components. Porter believed in this regard that strategy is a holistic and integrated attitude; although, there are many different and separated activities. Optimization is not possible without a systematic approach. Because, maximizing a section may lead to losing the important and vital properties of another section of the system.

Focus on the goal:
Strategic thinking specifies the orientation of the organization and puts it on the spotlight of the organization. This focus allows the organization and individuals to spend all their energy in this direction.

Intellectual opportunism:
Discovering opportunities and taking advantage of them is an important principle in strategic thinking. This feature means welcoming new issues and experiences and prepares the organization to adopt new strategies for new opportunities. Strategic thinking listens to the inharmonious voice of specific individuals to understand new opportunities and it has the ability to understand the appropriate conditions to change the strategy.

Thinking in Time:
Strategic thinking is a thinking in the organization that links the past, present and future to each other. Strategy is also a bridge between the present (current situation) and future (ideal situation). In strategic thinking, the future should be created based on today's capabilities (which are the organization's past achievements). 146 J. Appl. Environ. Biol. Sci., 5(11S) 145-150, 2015.
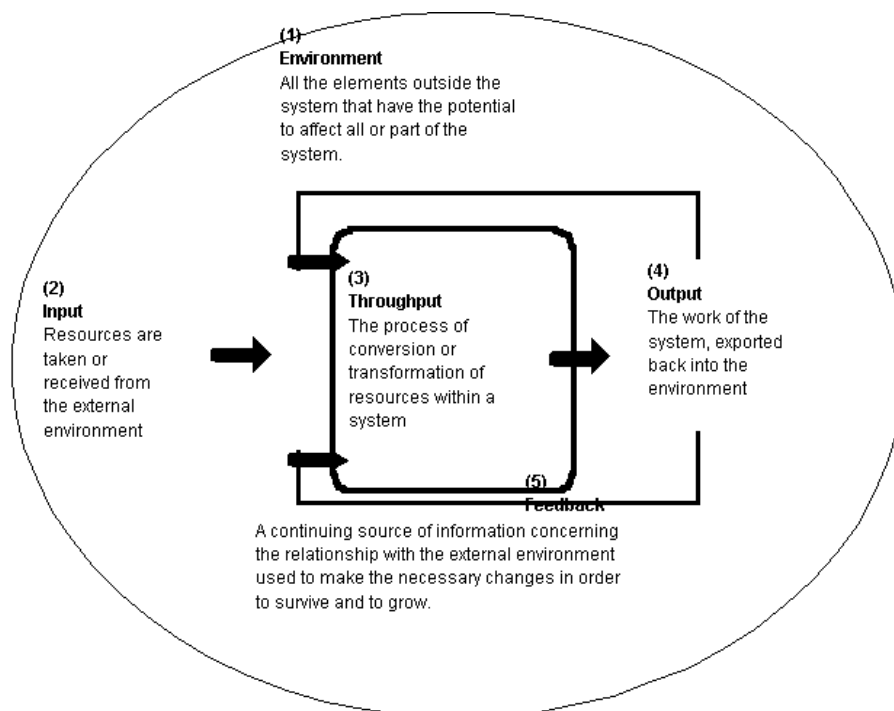

Figure 1:- System Thinking Approach.

Contributing to the debate, (Goodman, 2018) explained that systems thinking is a disciplined approach for examining problems more completely and accurately before acting. It allows people to ask questions before jumping to conclusions. Systems thinking often involves moving from observing events or data, to identifying patterns of behavior overtime, to surfacing the underlying structures that drive those events and patterns. By understanding and changing structures that are not serving well (including our mental models and perceptions), choices can be expanded that create more satisfying, long-term solutions to chronic problems. In general, a systems thinking perspective requires curiosity, clarity, compassion, choice, and courage. This approach includes the willingness to see a situation holistically, to recognize that people are interrelated; to acknowledge that there are often multiple interventions to a problem; and to champion interventions that may not be popular. Another researcher on the subject introduced another perspective as to how system thinking is viewed in contrast to the previous researcher on the subject. According to (Rouse, 2019), defining Systems thinking as a holistic approach to analysis, that focuses on the way that a system's constituent parts interrelate and how systems work over time and within the context of larger systems. The systems thinking approach contrasts with traditional analysis, which studies systems by breaking them down into their separate elements.

Section 2: Why are systems thinking used?
Systems thinking expands the range of choices available for solving a problem by broadening peoples' thinking and helping them articulate problems in new and different ways. (Goodman, 2018). At the same time, the principles of systems thinking make people aware that there are no perfect solutions; the choices made will have an impact on other parts of the system. By anticipating the impact of each trade-off, its severity can be minimized or even use it to an advantage. Systems thinking, therefore, allows people to make informed choices. Systems thinking is also valuable for telling compelling stories that describe how a system works.

The situation where systems thinking can be adopted:
The situations/issues that are ideal for a systems thinking intervention usually have the following characteristics:
1.   The Problem to be dissolved is important to the system/business.
2.   The problem to be dissolved is chronic or appears to be serious, although may not be a one-time event but has to be an event that has happened over time.
3.   The problem is familiar and has a known history in the system or with the system.
4.   Efforts have been invested to solve the problem but the efforts have been unsuccessfully in solving the problem before.

Using problem trace root technique to get the root source of what the problem is or the dynamics behind the problem, one can adopt what is called the iceberg framework. Which involves getting the group involved in the system, to describe the problem from three perspectives: events surrounding the problem, patterns around the problem, and the structure of the system where the problem reside in. Although systems thinking can be adopted with computer simulation and a variety of diagrams and graphs to model, illustrate, and predict system behavior. To mention a few among the system thinking tools are: the behaviour over time (BOT) graph, which indicates the actions of one or more variables over a period of time; the causal loop diagram (CLD), which illustrates the relationships between system elements; the management flight simulator, which uses an interactive program to simulate the effects of management decisions; and the simulation model, which simulates the interaction of system elements over time.

Case Illustration:
Evaluating an organisation from a System thinking perspective, the researcher focus is on software technology based companies, to illustrate the system strategic thinking due to the justification that technology based companies adopt system thinking in addressing and approaching enterprise solution for their clients.

Section 3: Comparative analysis of Methodological Approaches to System thinking
Systems thinking can be understood as a philosophy or a way of producing, interpreting, and using knowledge. It is a method for solving problems and organizing complex sets of concepts and fragmented views. It enables the integration of concepts and specific theories with a view to interpreting and seeking solutions to complex problems(Steiner, 2017).

To compare and contrast methodological approaches underpinning system thinking framework of an organization, 3 methodologies were conceptualized, and categorized into methodologies 1, 2 and 3. Each methodological approach was adopted with the system thinking framework in view. Each methodologies is explained below:

Methodology:-
Methodology 1:-

Figure 2:- Business Survival Growth Model(BSGM) adopted from Modern Day business model book by Austin C. Eneanya (2019).

Organisational System Thinking Model Approach to BSGM Framework:
System thinking consideration for BSGM hinges on the fact that, for the entire organisational model to be fully maximized. Each of the individual block component of the model must be developed and managed independently at first depending on the need and type of industry the organisation is operating in. Then link each independent block component together and optimized as an entire system to generate maximum effectiveness and efficiency. For some other organizations, such approach may not work, the more preferred approach will be developing each of the component block separately and link and stabilize each block component together with an assigned human resource to manage that component section. For others, it would work as an operational model developed and managed using ICT systems and with sub-level systems, integrated into each component block working independently but connected together with other component block like a gear or a pulley system in a machine. The specific objective of this system is to promote cost reduction in operations, time reduction in executing a task, output quality on result delivered and quality of work life for the human resource managing the block component of the BSGM system.

Look at the model like an organisational transport system that takes you from where you are to where you want to be. Or you can look at it like a chain reaction that has repel effect on the entire system once one block component becomes corrupted or damaged majorly through human action. The model explains that the future and growth of any establishment which starts from its Culture which is the Block 1, in every organisation culture exist. This can exist as either what is tagged as a good or a bad organisation culture, also known as corporate culture. It is the upper management duty and responsibility to define, sustain, promote and protect its culture from decay. For Block 2, containing the manager's tools of managing the organisation and leadership style of managing the firm, the Strategy and Tactics are formulated by the firm's executives. To survive in the marketplace, diversifies its Revenue streams to remain in business. Which is achieved as a result of the drivers of the firm's profitability or viability state. For block 3 to be self-sustaining, a good motivational system and tools has to be in place for the human resource in block 3 to devote more to the organizations development. The organisation expects the employee and employer to manage and develop the Block 3, the business operations, marketing and business positioning this contains the Business process, I.C.T Systems housing the business infrastructure and finally the Business positioning which is established by the joint effort of Block 2 and 4. This is usually triggered by opportunity the drivers of Block 2 and 3 creates. Block 4, is designed and structured in such a way that block 1 is automatically preserved, and protected from external corruption that is not supported by the core values of the organisation and what they stand for. In

Block 4, exist the employee and employer productivity contained in the human resource management system, which is consciously and unconsciously tied to the skills, work relationship and competency existing among the employee of the firm. The collective performance of the staff leads to the overall performance of the organisation in attaining its corporate goals and objectives. The common ground housing both employee and employer interest is the Staff benefit and welfare attached to the job. Demand is placed on the staff of the organisation to innovate and develop the block 4 of the BSGM system, In exchange for innovation or optimization.

The Internal Forces and Blocks are connected to each other such that if the Block 1 is bad and corrupted it automatically affects block 3 and 4, if block 2 is approached wrongly then, block 3 and block 1 is affected. If block 4 is approached, managed in an inappropriate way, it affects customer Lifetime value and block 2. This model explains that for an organisation to survive and grow beyond its current status quo, it must adopt a system thinking approach to each BSGM block to maxmise performance, growth or development of the enterprise. In reality the survival and growth model postulation is applied in each block of the BSGM system.

The External Forces acting on the diamond influences the individual block in which the forces are acting upon. For example, economic forces influence the purchasing power of the organisation to staff and other stakeholders. Which is controlled by the management and cash advancement running the organisation activities. Technological advancement influences the I.C.T systems and tools an organisation adopts to keep the organisation relevant and effective. The impact of the external forces usually has a direct or in direct impact on one or more blocks for an organisation internal forces acting within.

Note any organisation without this above business system is an organisation that is either barely surviving or is existing but not in business. With these in mind that the Business Survival Growth Model that what might be a survival system for one organisation is the next growth system for another organisation.

Methodology 2:
Using the Elements of Strategic thinking this model is related to "Glean Liedtka". This model is based on the theories of "Henry Mintzberg" and recommends five factors as the main components of strategic thinking:
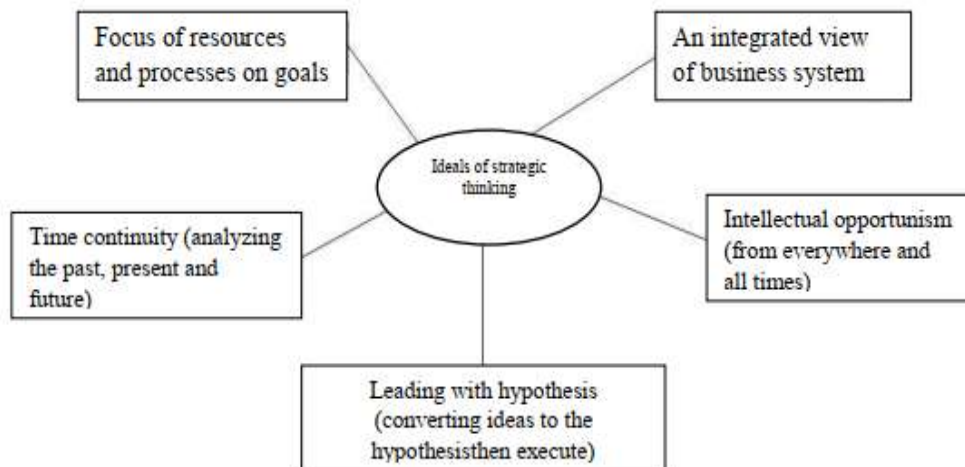

Figure 3:- Elements of Strategic Thinking.

Although this methodology can be linked to Liedtka describing the five features for strategic thinking as outlined above. This methodology although it addresses the holistic approach to system thinking but is at the discretion of the person or group of people implementing this strategic thinking approach and as such leverages on the person experience in handling or solving similar problem. Without been necessarily armed with the relevant information orpast trends. This model from the above analoguedisplays short comings and limitations, ultimately based on the implementer.

Methodology 3:
Strategic Thinking Models:
This methodology approach places emphasizes on learning from experience but with a clause of learning about customer requirements and taking proactive steps to meet customer needs on time or meet those need just in right in time when they need them. Although this model explains the system thinking approach it does not apply to the entire organisation system of this case study, this model majorly addresses one section of a typical software company which is usually in the design and functionality requirement section but is also applicable to design and consulting agencies.
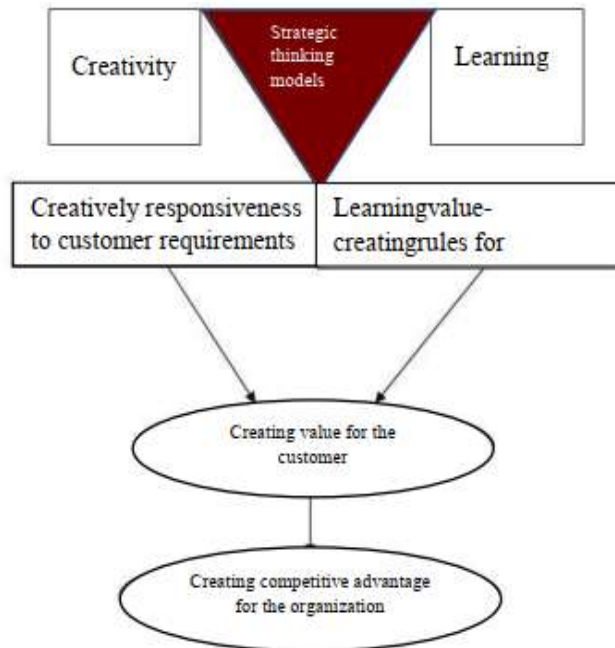
Section 4: Discussion of Results of Comparative Analysis of the 3 Methodological Approaches to System Thinking in Business organizations
There are five commandment that are necessary for strategic thinking according to (Feyzollah Zabihnia emran1, 2015)**:**
First Commandment: Seek to "learn" from the business environment more than getting information.

Second Commandment: Seek to discover non-responded needs more than responding discovered needs.

Third Commandment: Have ultimate goals more than intermediate goals.

Fourth Commandment: Seek to create the capability for competition more than creating the capability for production.

Fifth Commandment: Think about shortcut ways in the movement toward the goal more than speed. Although this commandment can be used as a guide in the above-mentioned model in the methodology section.

According to (Steiner, 2017), argues that any company operating in a competitive environment that desires to become a benchmark in the business world needs a managerial model enabling the development of systemic thinking on the part of its executives. The three methodologies explained in previous sections present different opinion and views of various researchers and scientist in the management field.

However, according to (Feyzollah Zabihnia emran1, 2015), on their analysis in the previous discussions as described earlier, shows that strategic thinking manifests itself at two different levels: individual level and organizational level. This approach integrates the micro focus on individuals and groups with a macro focus on organizations and their fields. In other words, this approach shows the impact of individual characteristics and actions on the organizational

field and reversely, the impact of the organizational field on the individual thinking and behaviour. As "Chatman" (1998) argues that: when we look at the behaviour of people in organizations; actually, we see two phenomena: the individual as himself and the individual as an organizational representative.

Methodology 1:
The diamond shaped external forces acting on the internal forces of the BSGM explains the complexity and dynamic nature of the internal and external forces acting on an organisation, which can also be approached using system thinking approach in evaluating and analyzing organisational issues and external business problems. This model explains that for an organisation to survive during this pandemic crisis, business owners and managers must first understand how their business will evolve around or beyond the crisis to ensure sustainability and continuity of existence for their respective organizations'. The continuous growth of COVID-19 pandemic has brought about both economic and globalization issues, which is a situation beyond the control of any business owner. For any organisation to escape the scorch of the current crisis, this model allows organizations to take proactive steps, such as establishing the need for them to setup management, communication and operational digital systems that will ultimately keep them in business. But for non-technological businesses, there would be need for the team of that organisation to organize a brainstorming session to seek for alternative ways to remain in business in the midst of the pandemic crisis. If the organization survives beyond the pandemic especially for startups and small scale businesses.

Methodology 2:
This emphasizes the ideas of strategic thinking with focus on organisational resources, time trends involving analysis of the past, understanding the present situation and predicting the future with both the past and present trends. And adopting intellectual opportunity to capitalize on situations to increase an organization's competitive advantage. But these elements do not take into account the impact of external forces that not only influences strategic thinking ideas but can render it obsolete if not updated as situationsunfold. This automatically makes this model, more of a reactive concept approach than a proactive concept approach

Methodology 3:
This model emphasizes on creativity, learning, responding to customer requirements andcreatingcompetitive value for the organisation based on previously executed steps on increasing customer lifetime value. The limitation of this model is that there is too much emphasis on what the customers want as against what influences the customers to need what they want and crave for what they need due to external business environment that can influence taste and preferences of customers.

Section 5: Application of Methodology 1, using system thinking management methodology for businesses against thedecapictating COVID-19 situation especially to Businesses and Religious Organizations.
The most appropriate methodology that best manages the COVID-19 crisis, and any other disruption that may arise in future is Methodology 1 which perfectly integrates complex organizational systems and adaptability an organisation needs to survive beyond the on-going economic crisis ravaging the whole world.

Systems thinking can also be applied with PESTEL analytical framework. A good illustration of these analysis is relatable with the COVID-19 crisis currently on going all over the world. What then is P.E.S.T.E.L analysis? This simply means P=Political, E-Economic, S=Socio Cultural, T=Technological, E=Environmental and L=Legal Factors that can drastically affect a business either positively or negatively. This is demonstrated below using system thinking approach as:

Section 1:Systems Thinking and ImpactofCoronavirus (COVID-19)Crisis on business and religious organizations in Nigeria:
Political Impact:
1. Based on the ongoing crisis, this crisis has paralyzed the governance capacity to implement planned and budgeted policies.
2. Suspension of direct diplomatic relations as everyone is now focused to observe social distancing.
3. Due to fear of been infected or losing one's life, this crisis has prevented governments and their agencies from discharging direct oversight functions.

Economic Impact:
1. Based on the on-going crisis, these has led to shutdown of business activities. Which has led to the collapse of businesses and lay off of many workers
2. This COVID-19 season has led to economic inflation and hike in prices of commodity
3. This crisis has also led to a drastic drop in international crude oil trade
4. It's also bringing about cut-off of supply chain
5. It has also led to reduced income from taxes including VAT

Social Impact
1. This crisis has also led to shutdown of places of worship
2. It has also led to the shutdown of recreational centers such as cinemas and entertainment centers.
3. Compulsory observance of social distancing including self-isolation for anybody that exhibits any symptom of infection.
4. Introduction of ever evolving new ways of social and cultural interactions.
5. This has disrupted wedding ceremonies, concerts, sports, conferences, parties and other social gathering.

Technological Impact
1. Increased presence and usage of E-activities, E-governance and E-commerce etc.
2. Increased need and relevance of software and digital applications
3. Increased presence of online social interaction over offline social interaction
4. Increased acceptance of online education and training for students
5. Increased presence and market entry of online communities

Environmental Impact
1. Increased environmental awareness for the people
2. Increased consciousness about personal hygiene by the public
3. Increased high demand and need for sanitizers and disinfectants
4. Increased market presence of dangerous substances masked as sanitizers and protective mask.

Legal Impact
1. Suppressed fundamental human rights
2. Delayed implementation of justice
3. Increased use of force on the masses in the process of effecting the shut down
4. Close down of any court gathering or sitting
5. This crisis has led to the inability to conduct due diligence on legal aspects of businesses
6. Forced decongestion of prisons/amnesty because of the on-going COVID-19 crisis

System Thinking Framework:
COVID-19 crisis has caused many industries to lose profits, while others benefit and make gains in the process. However, applying systems thinking to the crisis exposes the real gainers and losers as illustrated below:

Top Losers of COVID-19 Crisis:
The Aviation Industry:
The aviation industry is one of the biggest industries in terms of set up, operational cost, maintenance and management. Due to the grounding of people and goods. This has automatically pushed some airline to the brink of bankruptcy or liquidation.

The Entertainment Industry:
This industry can be said to be one of the fastest cash cow out of other industry. This is because the combinations you need to become a millionaire and a celebrity is talent, a good record label and promotions. Any regular artist can become a superstar overnight. Making it the fastest cash cow compared to other industries. But due to the COVID-19 crisis, all shows, events and concert has been placed on hold. With event centers getting the most heat as revenue declines to zero for them.

Small & Medium Scale Enterprises:
COVID-19 crisis has not only affected small businesses but it has grounded operations, cash inflow and any business activities that keeps the organisation in business. Businesses that are feeling the most heat are Tourism companies, travel agencies, outdoor businesses and fashion houses. As companies are now forced to develop different strategies to stay in business or lockdown its business.

Religious Organisation:
Religious places of worship such as churches, mosques and others are experiencing the most heat, as it has affected the growth of membership of many churches, decline in revenue generation for many who cannot afford to setup technological or digital platform to reach out to members and keep things running regardless of the COVID-19 financial crisis that has decapitated places of worship in terms of attendance and other religious related activities.

Top Gainers ofCOVID-19:
Communication corporations:
Due to the introduction of the change of work pattern of organisation culture. More preference will definitely be accorded to online channels of doing business, which will automatically lead to the increase of data bundle purchase from both individuals and corporations.

Loan Corporations:
With the decline increase of financial struggling currently savaging organizations, business owners and managers, there will be high demand for loan from financial institutions such as loan organizations and banks.

Logistics and Distribution Companies:
Due to the growing concern of transportation of goods to various retailers and wholesalers for the basis of survivor of the masses. There is currently on-going demand to move goods and product from where it was produced to where it is needed. As the fear of uncertainties hikes up the demand for goods.

The Methodology 1 explains the addition of a new generation of strategic thinking approach that addresses either proactive or reactive approach for an organisation to survive beyond the COVID-19 crisis. This model explains that the strategy which helps organisation to survive, is a growth opportunity for another organisation according to (Eneanya, 2019). Methodology 1 showcases the organisation system structure that can be established in any organisation structure, that may consist of multiple inter connected factors that are adaptive which will have the capacity to be custom blended to suit the organisation structure and size. This model uses the interconnectedness of the working arm of the organisation, while adopting a system thinking approach.

Conclusion:-
In conclusion, a split test was conducted for two technology based companies. Company A applied methodology 1 with other methodologies adopted in its activities and Company B applied other methodologies excluding methodlogy 1. It was discovered Company A experienced stability, growth and steady development over time in processes, people and systems. While Company B struggled to stay business and experience a decline in growth, halted strategic plans and decreasing revenue to even pay workers salary. Both companies will not be mentioned in this paper due to research confidentiality promised to both companies. System thinking assessment to any kind of systems is the approach adopted in fixing system related problems while using inter componenet holistic realtionship. There are several factors affecting the system thinking. To mention a few such as: system patterns addressing external forces that influence holistic systems such as policies, norms and believes, structures and interventions surrounding attaining optimized solution to system related problems, events, activities or issues.

According to (Steiner, 2017) the following will exist for organisation with no System thinking in place which are:
1. There will be no precedents to follow;
2. Most of the time decisions are not structured but circumstantial;
3. They compromise significant resources based on impulse;
4. They require a high level of commitment when things don't go as planned; and
5. They affect operational of the organisation.

Soft Systems Methodology uses the concept of the whole entity. It involves comparing abstract wholes with the real world in order to learn about it. Soft Systems Methodology is a learning process. Although there are two traditions

involved in system thinking: a) Hard (Systematic) and b) Soft (Systemic) as described by other opinions in the management field. Systematic assumes systems in real world which are usually approached by consultants and experts, Systemic on the other hand creates systems on the basis of enquiry. Adopting this to methodology, it's safe to say that Soft Systems Methodology also uses systems as a tool (therefore subsuming hard systems thinking as a special case) depending on the context and application of the researcher. Hard systems techniques can be incorporated into Soft Systems Methodology when approached from a research or academic perspective. Reviewing the topic statement which states "Systems thinking essentially seeks to understand phenomena as a whole formed by the interaction of parts." (Stacey, 2011)." Validating this statement is true from the model and methodology analysis. In application to technological based companies which first seeks to understand the entire scope of work to be done before seeking to understand the interactive parts of the system and how each part interacts with each other, can be said to affect the system thinking approach. Organizations' who do not adopt system thinking approach tend to experience the following environments of uncertainty, it is increasingly difficult to make strategic decisions.

References:-

1. Eneanya, A. (2019). Modern Day Business Model (2 ed.). USA: Lulu Books.
2. Feyzollah Zabihnia emran1, S. E. (2015). Strategic Thinking and Its Approaches. Journal of Applied Environmental and Biological Sciences, J. Appl. Environ. Biol. Sci., 5(11S) (ISSN: 2090-4274), 145-150.
3. Goodman, M. (2018.). thesystemsthinker.com. Retrieved 10 21, 2019, from https://thesystemsthinker.com/systems-thinking-what-why-when-where-and-how/
4. Rouse, M. (2019). WhatIs.com. Retrieved 10 21, 2019, from https://www.techtarget.com/contributor/Margaret-Rouse
5. Steiner, D. W. (January 2017). The Strategic Decision-Making as a Complex Adaptive System: A Conceptual Scientific Model. https://doi.org/10.1155/2017/7954289, Volume 2017(Article ID 7954289,), 13 pages.
6. Study.com. (2018). study.com. Retrieved 10 21, 2019, from https://study.com/academy/lesson/systems-thinking-in-management-definition-theory-model.html.