Digital Transformation Solution for Energy and Utilities Market

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ABSTRACT: For Lot of companies across thr world for energy and utilities industry the key challenge I not just to optimize and transform existing processes and business models in more efficient way but also to find completely new ways to conduct their business across numerous areas and functions. The opportunities and challenges may seem in lot , talent and technology funding are not. As industry leaders balance the need to pivot for the future with current daily demands, the question is 'where do you start the journey of digital transformation?'. This paper attempts to provide an insight in example just to demonstrate on how using components of Digital Transformation with defined approach and methodologies can allow utilities need to create lasting operational improvements. ions need to transform to address rapidly changing business landscapes, which is the main reason why digital transformation is so crucial for companies that enables to redefine the complex business process into simple and innovative solutions that helps business executives focus more on business results, innovation and continuous development. The main focus of this paper is on howdesign thinking redefines business performance by generating innovative ideas and providing sustainable, groundbreaking customer-centered solutions by glancing through the viewpoint ofuser needs

KEYWORDS: Design Thinking, Digital Transformation, Industrial Revolution, Edge Computing, Artifical Intelligence, Internet of Things

I. INTRODUCTION

Digital transformation is widely affecting various industries particularly healthcare, telecommunications, automotive, banking and manufacturing sectors. It enables innovation practices, improved designs, and new business models, and shapes how organizations create value on the Internet [9]. Companies can leverage robust customer relationships and increase cross selling opportunities through successful digital transformation [26], [28]. Digital transformation is not solely about acquiring and deploying the fit for purpose technologies; rather it is a significant approach in tackling managerial issues such as human resources, business efficiency, and business process redesign [17].

According to Hess [11], digital transformation has become a high priority on the leadership agenda of many organizations. Almost 70% of reported organizational transformation practices fail to meet organizations ambitions, the timeline for the transformation, or both [13], emphasizing the importance of the need for more research in this field. However, while the term digital transformation is increasingly being used in the electronic commerce research and practice, it has rarely been defined in the extant literature and professional articles. Thus, the first objective of this study is to review current understanding of this notion in the extant literature, and to explore what digital transformation entails. For Lot of companies across thr world for energy and utilities industry the key challenge I not just to optimize and transform existing processes and business models in more efficient way but also to find completely new ways to conduct their business across numerous areas and functions. The opportunities and challenges may seem in lot , talent and technology funding are not. As industry leaders balance the need to pivot for the future with current daily demands, the question is 'where do you start the journey of digital transformation?'

Lets take an example of how establishing a simple digital transformation solution could allow a utility to pursue intelligent automation that led to improved operational efficiency and lowered inventory carrying cost.

One large United Kingdom electric and natural gas company wanted more efficient and synchronized way of operations to manage inventory through sourcing, installation and inspection but the legacy roadmap of re-engineering and optimization for vision of cost saving hasen't resulted into the substantial outcome as required.

I had opportunity to create a team with this client to ideate and co-create the prototype solution on material tracking and reconcile. This proof of concept demonstrated the potential for up to 11% reduction in inventory carrying costs and anticipated operating cost savings around $25M per year. It also digitized the traditional based material reconciliation process by cutting down its current cycle time of 180 days to near real-time with use of Cloud, Internet of Things (IoT) and Augmented Reality (AR) technologies
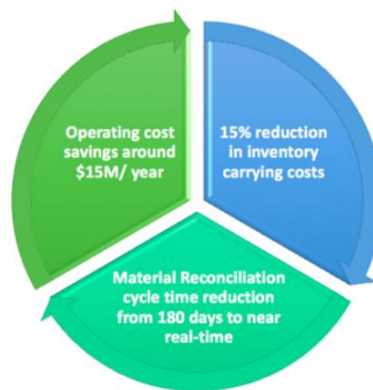
Proof of concept - Business value through Digital Transformation

II. RELATED WORK

• Airbnb's innovative transformation journey as described in first round from a failed start-up to a billion-dollar business today that started with $ 200 a week in 2009 to a projected revenue of $ 8.5 billion by 2020. • Apple has delivered innovative products through a solution-oriented design thinking process, Design Thinking Apple making the company a great success through better customer satisfaction. • SAP is redefining growth and profitability sap design thinking through the "SAP Leonardo" digital platform that rely completely on design thinking methodology. • Netflix stays ahead of its competitors by following the design thinking process that helps them predict customer requirements in advance and provide them with the relevant services, all this is done through "Empathy." • Adidas outperforms its competitors by embracing new business ideas which help them to remain competitive by offering a great customer experience. • Ford a 115-year-old pioneer of American automakers, redefines its organization by implementing the innovative design thinking approach. • This article describes about Doug Dietz story who led the breakthrough innovation of GE Healthcare - MRI transformation using the human centered design thinking process. • UX manager of Home Depot Brooke Creef illustrates how design thinking drives innovation within their product teams to redefine business performance that address the customer's key needs, helping them stay on top in supply and demand. • PepsiCo turned design thinking into their strategic approach to anticipate their consumer demands and transform the products accordingly to increase business innovation as a whole.
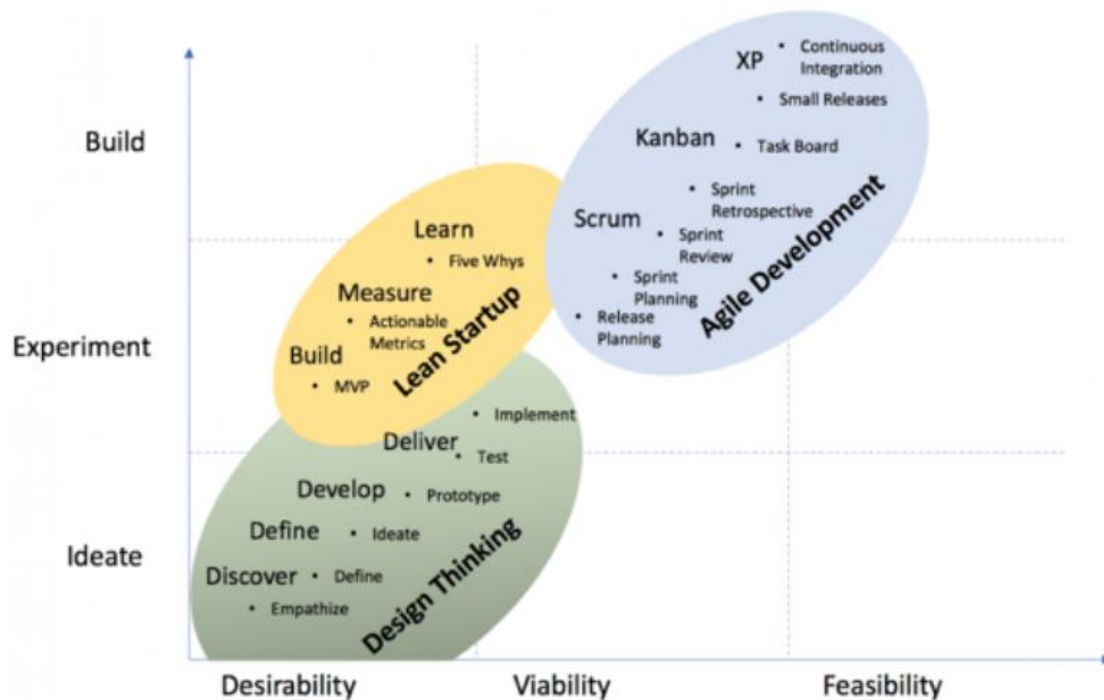
III. PROPOSED SOLUTION

We followed our three steps innovation model [Idea, Experimental and Build and Test] backed by set of methodologies [Design Thinking, Lean Startup, Agile Development] across 3 distinct dimensions [desirability, viability and feasibility] to envision and generate solution under digital transformation program.

With only 3 days design thinking workshop to discovery and define cline requirement statement, followed by two days ethnography study at job site to gain firsthand knowledge of field requirements and just five weeks of development, we build this prototype around three main use cases:

- **Inbound/ outbound material logistics**
    - Materials will have QR code and RFID tags. RFID readers installed at exit/entry gates will scan items automatically to update material status to 'In-Transit' when material leaves warehouse AND 'Arrived at Job site' when material reaches job site
- **Recording and status reporting of material inventory at job site**
    - Field workforce will use Augmented Reality glasses OR their mobile phones to record status of material quantity 'received'; 'consumed' during installation; 'surplus' and/or 'scrapped' at job site through a well defined and easy to follow workflows on AR glasses/ mobile phones.
- **Gathering of data on project completion**
    - Solution provides single and responsive dashboard to empower material coordinators and construction managers with the collaborative tools to ease and improve their ability to track material delivered, consumed, scrapped and returned. This provides real-time visibility of inventory which helps material coordinator to effectively coordinate and optimize logistics for other job site requirements which substantially reduces inventory carrying costs.
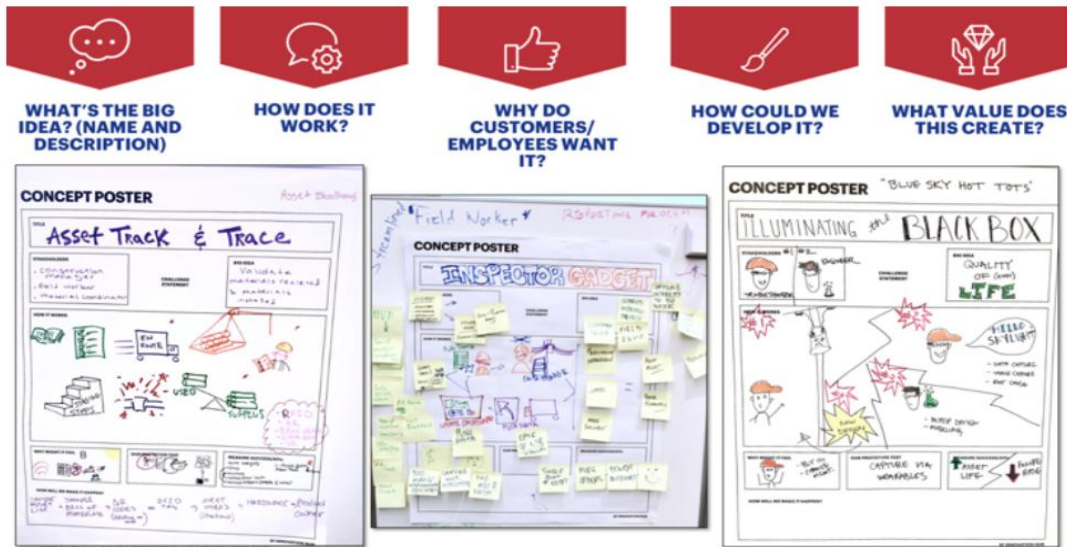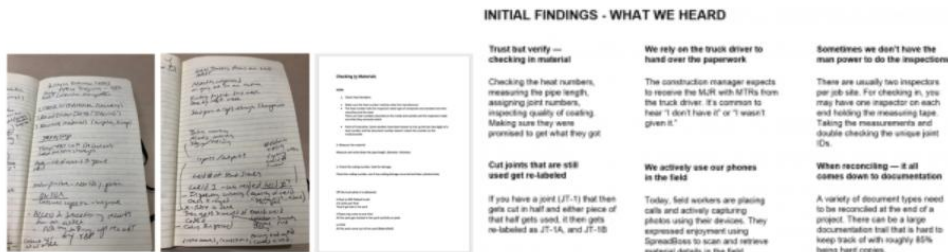
Step # 1: Design Thinking workshop

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Step # 2: Ethnography study – Interview Notes

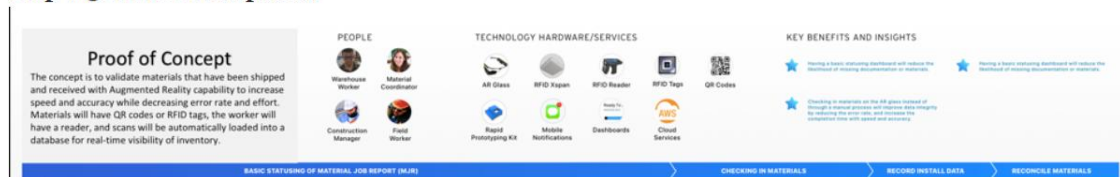## Step # 2: Ethnography study – Interview Notes

Step # 3: PoC Development

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We are thinking of this as 2 folded project and the plan is to mature and learn from the phase 1. We will further prioritize the portfolio to monitor opportunities and decide on the roll over plans.

This we treated as one example just to demonstrate on how using components of Digital Transformation with defined approach and methodologies can allow utilities need to create lasting operational improvements.

Here is the brief overview of Components of Digital Transformation which will help you to get a better understanding:
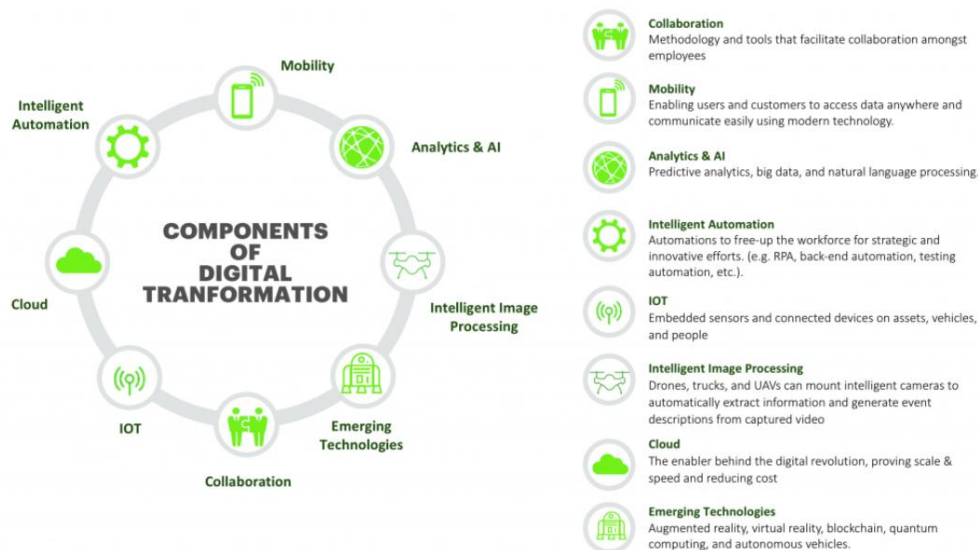
IV. CONCLUSION AND FUTURE WORK

This study clearly define the the organizational capabilities and the future of digital transformation using digital business strategy. It demonstrates how the set of organizational capabilities and unique dimensions of digital business strategy would drive an organization towards digital transformation. The end result resulted in dimensions of digital transformation, digital business strategy This conclusion provides a broader contribution on digital transformation literature and it enriches the literature by providing a framework of the -relationship of the organizational capabilities, digital transformation and digital business strategy. This research also represents the unique set of dimensions entailed by digital transformation, digital business strategy and organizational capabilities.

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