ENTERPRISE DIGITAL TRANSFORMATION
THE NEXT ERA IS ALREADY HERE!
We have entered a digital era. We are in a hyper competitive environment where enterprises have to constantly innovate and adapt to disruptive technologies. New age digital organizations that don’t have traditional brick and mortar assets are rapidly disrupting the businesses of traditional organizations. We estimate that about half of the companies in the Fortune 2000 list will be displaced by digitally empowered organizations.

While most organization today understand the need to undertake a digital transformation exercise, many still struggle to define what “Enterprise Digital Transformation” truly is. There is still a lack of clarity on the fundamental differences between initiatives to modernize IT infrastructure vs. digital transformation.

Through our study we have strived to define “Enterprise Digital Transformation-EDT” and also clearly call out the differences between digital transformation and modernization of IT infrastructure. This report hopes to give a definition for EDT that can be used by all stakeholders in industry- both buy side and sell side.

The report also focuses on providing a broad framework that organizations can use to enable EDT.

We have recommend four steps for all traditional enterprises that are undertaking the Digital Transformation journey. The four steps include building EDT knowledge base and understand possibilities, assessing business and digital priorities, establishing a step-by-step methodology for digital readiness and finally implementing digital solutions incrementally and iteratively.

We believe businesses will need to focus on multiple initiatives to drive their digital transformation roadmaps. This includes relooking at their organization structure and building capabilities for a digitally enabled organization. We also believe a lot of the digital transformation initiatives will be implemented simultaneously with IT modernization programs.

This report strives to addresses all the above critical points and act as a guide for internal champions for digital transformation within their organizations.

Pari Natarajan
CONTENTS

Enterprise Digital Transformation

Introduction 4
Emergence of Digital Enterprises 8
Definition 9

EDT Market Overview

EDT Market Spend 12
EDT Trends 15

Roadmap for EDT

Challenges 24
Roadmap 28
Case Studies 40
Future Scenarios 41
01.

ENTERPRISE DIGITAL TRANSFORMATION

It is not the strongest or the most intelligent who will survive but those who can best manage change.
- Charles Darwin
INTRODUCTION

The evolution of economies over the last many centuries can be broadly segmented into four ages. These ages can be defined by changing needs of consumers together with evolving businesses to fulfill these needs. For centuries businesses have had to transform and adapt in order to survive. The type of transformation undertaken has invariably been governed broadly by business goals an organization seeks to achieve together with the business environment it needs to flourish in. These transformations can clearly be demarcated based on the primary source of wealth creation, inventions that have driven consumer behavior and growth of technology as an enabler of business growth.

Over the centuries, the pace at which organizations have had to transform themselves has witnessed rapid growth. The time taken to transition between ages has progressively declined.

Today we are in digital age where economies across the globe are extremely intertwined and power rests in the hands of consumers with role of consumers not limiting to buyers only. In a majority of cases, consumers are producers and co-creators as well. The digital age has at its forefront a new breed of entrepreneurs that are breaking all traditional mindsets to how businesses are run. The digital age also have opened up a global landscape where customers and competition aren’t just in home markets but can be anywhere in world.

The four ages of business evolution have been discussed in brief below:

The Agrarian Age
(8th to 19th Century)

- Functional Enabler: Domestication of animals, water wheel, ploughs

The Industrial Age
(1800 -1940)

- Functional Enabler: Steam locomotive, conveyor belt, printing revolution
- Key Disruptors: Ford, John Deere, Standard Oil Company

The Automation Age
(1950-2007)

- Functional Enabler: Business process automation, mainframes, client servers, Internet, workflow automation systems
- Key Disruptors: HP, IBM, Microsoft

The Digital Age
(Defining the next 15 years)

- Functional Enabler: Data, Social, Mobility, Analytics, Cloud
- Social Media: A third of world’s population will be on social media by 2017
- Mobility: 2 billion smart-phones by end of 2015
- Cloud & Analytics: Cloud applications will account for 90% of total mobile data traffic by 2018

Business evolution through the ages
Source: Zinnov Analysis and Research
The Agrarian Age
(10,000 BC-1700 AD)

This age witnessed agriculture as the primary source of income. Cattle and agricultural produce were the primary drivers of the economy. The age witnessed some of the earliest inventions, which laid the foundation for every future invention known to mankind.

The automation age is marked by the growing focus on driving business growth for benefit of all stakeholders. The focus has been on driving efficiencies and increasing profitability. The age also witnessed process improvements through reduction in human intervention and leveraging technology in multiple areas.

It is also the age of computing, where consumers for the first time felt empowered with access to information. This age also witnessed the evolution of social networks from a physical closed knits group to large virtual communities.

The Digital Age
(Next 15-20 years)

We have just entered the digital age. It is an age that is going to be marked by infinite power to consumers. Consumers having access to significant technology resources will play a key role in determining how businesses need to evolve, with businesses being forced to offer new age products and services.

The age will witness the emergence of organizations that co-create with customers. There will also be growth in amount of data created by consumers and their networks. Organizations will begin to leverage this vast swaths of data to evolve into business that can survive in a data driven, technology enabled world.

The digital age is very different in its impact on business from the three ages discussed. It is marked by very little room for error in business. Organizations not only need to transform their products, services and processes to deliver the same, but also in many cases fundamentally consider restructuring their business.

Today in digital age, Organizations are being forced to change their entire outlook, undertake structural changes and implement the same at a rapid pace. These changes need to iteratively evolve to account for the changing mindset of an empowered customer. The organizations that fail to match pace might fail to survive.

As per our research estimates, over USD 30 trillion of market capitalization would be disrupted by digitalization. This disruption will impact 8 key industry verticals.

This also indicates that in the next 2-3 years, over 550 companies in the Forbes 2000 list would move out, and be replaced by organizations that are far more tuned to a digital universe.
Among all verticals, retail industry has been impacted the most by digitization. Digitally native enterprises have fundamentally changed the business and operations landscape, and consequently moved ahead of the pack. The erstwhile approaches towards customer engagement and targeting have proved to be ineffective as they focus on large demographics and offer limited choices. With the transition of power into the hands of the tech-savvy millennial customer, digital native retailers are targeting customers and engaging with them in newer & innovative ways via a range of channels.

Instead of dispensing mass promotions, digitally native retailers target every individual by triangulating data procured from multiple sources such as social media, browsing footprint, point-of-sale devices, in-store interactions, and app usage. This helps in ensuring an ongoing relationship with every customer in a meaningful and personalized manner. In addition, context-based targeting helps digitally native retailers predict customer behavior thereby requirements and purchases more accurately.
Digitally native retailers also provide their customers enriched personalized experiences both online and in-store. They have successfully merged the boundary between physical and digital realms seamlessly in order to provide the perfect continuum of experiences called the ‘Phygital’ experience. By leveraging customer intelligence from the aforementioned data sources together with new-age technologies, digital natives have transformed the erstwhile experience to dynamic, interactive and customized one. Gamification, Retail Theater and Augmented Reality are being increasingly used to engage with customers digitally in a physical brick-and-mortar environment. Omni-channels enable enterprises sync the experience they provide and their targeting across multiple devices and channels.

The exponential disruption in today’s world by the digital natives has made it imperative for traditional enterprises to transform. Their only solution for staying relevant is Enterprise Digital Transformation.
A digital enterprise rests on the foundation of modern IT infrastructure. Virtualization, hybrid cloud, handheld devices, and sensors enable a digital enterprise to effectively capture and store large volumes of structured and unstructured data, as well as establish flexible, scalable and intelligent networks. The procured data is fed into a data integration platform, where it is curated, standardized and contextualized in order to provide a unified view. Digital enterprises leverage curated data and analytics engines to provide digital services across the following six horizontals:

- Customer Targeting and Engagement
- Workforce and Partner Enablement
- Operational Excellence
- Supply Chain Optimization
- Risk Management
- Digital Products and Services

Digital enterprises reap manifold benefits, tangible and intangible, ranging from increase in top-line and bottom-line, growing customer base, high customer satisfaction, and better productivity.
DEFINITION

Data driven enterprises leveraging contextual, public and internal enterprise data and using new-age technologies to generate deep insights that are both predictive and prescriptive to drive exponential business impact.

As stated earlier, Enterprise Digital Transformation comprises six digital services:

- Enhancing workforce & partner productivity through ecosystem integration and collaboration
- Assisting enterprises increase customer base, engagement, loyalty and advocacy by understanding every customer in order to provide targeted promotions and marketing, personalized in-store and online experience
- Enhancing existing products/services or creating new products/services through digitization
- Enabling enterprises optimize their business processes real-time within the organization (incl. support functions)
- Helping organizations in not only real-time fraud & theft detection but also prevention
- Enabling organizations achieve a more accurate and robust supply chain via real-time demand assessment & forecasting, dynamic inventory management and real-time supply chain optimization

The six digital services exhibit varying potential for digital disruption across verticals. Retail, Media & Entertainment, Travel & Hospitality, BFSI, Telecom, Healthcare and Energy & Utilities were the 7 verticals analyzed and evaluated for Digital Disruption Index (DDI) across 6 digital services.
Digital Disruption Index takes into account the current digital maturity as well as the potential for future digital disruption. Our research indicates that Retail, Media & Entertainment, Travel & Hospitality, Retail Banking and Insurance (micro-verticals of BFSI) demonstrate the highest potential for disruption.

From an EDT perspective, customer facing verticals like Retail are most digitally advanced.

<table>
<thead>
<tr>
<th>Vertical</th>
<th>Customer Targeting &amp; Engagement</th>
<th>Workforce &amp; Partner Enablement</th>
<th>Operational Excellence</th>
<th>Supply Chain Optimization</th>
<th>Risk Management</th>
<th>Digital Products &amp; Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
<td>High</td>
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<tr>
<td>M &amp; E</td>
<td>Medium</td>
<td>High</td>
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<tr>
<td>T &amp; H</td>
<td>Medium</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
<td>Medium</td>
<td>Medium</td>
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<tr>
<td>BFSI</td>
<td>Medium</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Telecom</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Healthcare</td>
<td>Medium</td>
<td>Medium</td>
<td>Low</td>
<td>Medium</td>
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<td>Medium</td>
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<tr>
<td>Energy &amp; Utilities</td>
<td>Low</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>Medium</td>
</tr>
</tbody>
</table>

EDT maturity against industry verticals
Source: Zinnov Analysis and Research
Enterprise Digital transformation is emerging as a key driver for technology spend. The market opportunity in this segment is expected to witness rapid growth in the near future. Enterprise Digital Transformation will impact enterprises across all industry verticals. However, the impact of EDT is expected to be higher in customer facing industry verticals such as Retail, Media & Entertainment, Travel & Hospitality, and BFSI that are expected to spend a large percentage of their digital budget on Customer Targeting & Engagement. On the other hand, verticals such as Healthcare, Manufacturing, and Energy & Utility will invest in building operational excellence capability.

EDT spend in 2015 is projected to be approx. USD 70 billion which is estimated to reach USD 230 billion by 2020. The following section discusses in detail ideal spend on EDT across industry sectors.
EDT MARKET SPEND

Traditional enterprises should invest USD 70 billion in 2015 in order to stay competitive against digitally native firms.

Our research indicates that technologically advanced countries will contribute a proportionally higher percentage to EDT Spend. North America will account for more than 40 percent of the projected Ideal EDT spend in 2015. This will be driven by the presence of digital hubs in Bay Area and New York City together with easy access to digital technology which forms the infrastructure backbone of Enterprise Digital Transformation.

Key Insights
- North America is expected to contribute over 40% of the Enterprise Digital Transformation spend. APAC and Latin America will lead in growth rate.
- Customer Targeting & Engagement is a primary focus area for enterprises and will constitute 33% of the spend.
- Verticals focused on B2C business will spend a larger percentage of digital spend on Customer targeting and engagement.

EDT spend and projection
Source: Zinnov Analysis and Research
According to our estimates, Latin America and Asia Pacific are expected to witness high growth rate in EDT spend due to rapid globalization and rise of a plethora of small and medium enterprises.

With EDT being an effective tool for targeting and engaging millennial customers, approx. USD 14.4 billion (in 2015) is expected to be invested in Customer Targeting and Engagement in Digital Transformation. The expenditure is projected to reach USD 100 billion by 2020. In addition, enterprises are focusing on enhancing their business processes for optimizing their operations. Our research indicates that enterprises will spend an estimated USD 8.4 billion on enhancing Operational Excellence in 2015.
EDT Market Overview

Ideal EDT Market Spend (USD Billion)

- Operational Excellence: 8.4 (2020)
- Supply Chain Optimization: 2.4 (2015)
- Risk Management: 3.3 (2020)
- Digital Products & Services: 4.5 (2020)

Total Ideal EDT Spend: USD 230 Billion

CAGR: 26%

USD 70 Billion

2015

2020

EDT Market Spend Opportunity Assessment

- Retail & CPG: 12 (2015), 35 (2020)
- Travel & Hospitality: 6 (2015), 22 (2020)
- BFSI: 16 (2015), 45 (2020)
- Telecom: 8 (2015), 26 (2020)
EDT TRENDS

As discussed in the previous section, Digital Enterprises leverage contextual data to implement solutions that enhance value chain. EDT solutions drive business growth across the six key horizontals discussed below:-

Customer Targeting and Engagement

Enterprises are using digital solutions to engage with their customers, create awareness about new products and build brand loyalty. Businesses have shifted from traditional transaction based short term interactions with customers to long term relationship-building engagement models.

With customer being increasingly empowered, enterprises are striving to maintain a competitive edge by offering personalized experiences, customized promotions and omni-channel facilities for a consistent experience.

<table>
<thead>
<tr>
<th>Awareness</th>
<th>Engagement</th>
<th>Trial</th>
<th>Retention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Media</td>
<td>App Usage Data</td>
<td>Loyalty Program Data</td>
<td>Browsing Footprint</td>
</tr>
<tr>
<td>Data Sources</td>
<td></td>
<td></td>
<td>Point-Of-Sale</td>
</tr>
<tr>
<td>CRM Data</td>
<td>RFID/Sensor Data</td>
<td>Product Usage Data</td>
<td></td>
</tr>
</tbody>
</table>

Digital Solutions

- **Digital Content & Channel Management**
  - Liongate's The Hunger Games engaged with its digital customer base using varied social media platforms
  - **Benefit:** 6th largest opening weekend -sale in the history of Hollywood with USD 152 Million

- **Phygital Experience**
  - Burberry broadcast their multifaceted content directly to stores in real-time
  - **Benefit:** Growth rate increased from 2% (industry laggard) in 2004-05 to ~22% (14% above the industry) today

- **Customer Engagement**
  - Pivotal Labs helped Crescendo Bioscience prototype an app that would track daily conditions of arthritis patients
  - **Benefit:** Enhanced patient-physician communication leading to higher share of mind & loyalty

- **Personalized Experience**
  - British Airways enables crew equipped with iPads to search database equipped to facilitate recognition of million-mile fliers on arrival at the airport or aircraft in order to provide customized services
  - **Benefit:** More meaningful and personalized engagement with customers

Value chain and digital solutions for Customer Targeting and Engagement
Workforce & Partner Enablement

Enterprises are using EDT solutions to drive internal and external collaboration with their partners and stakeholders.

Companies such as Deloitte are leveraging gamification to improve both internal and external collaboration.

Similarly sales teams at GE Aviation were successful in achieving significant time savings with efficient digital knowledge-sharing solutions.
Operational Excellence

The operations value chains across different industry verticals are diverse and complex. As an illustration, we have chosen healthcare providers to demonstrate how enterprises are leveraging data and technologies to make their operations more efficient and effective.

Real-time asset tracking and decision support systems have helped these providers reduce costs and reach out to a larger customer base.

Enterprises at the forefront of the digital revolution are leveraging digital technologies and data to make their business processes more efficient, accurate and agile.
Supply Chain Horizontal

With markets being extremely volatile and dynamic in digital age, needs and nature of customers is evolving constantly. Therefore predicting demand is a key challenge. Hence supply chains can no longer be reactive to market changes, rather need to be more predictive in nature.

Supply chains are moving from being linear & simpler to broader complex networks while becoming more flexible and fortified against disruptions, thereby resulting in profitable and effective supply chains.

**Demand Forecasting**

- Point of Sale
- Social Media
- Weather/seasonality Data
- Market Trends
- Supplier Data
- CRM

**Procurement**

- RFID/Sensor Tracking
- Vehicle Management System

**Warehousing**

- RFID/Sensor Tracking
- Warehouse Data

**Shipment**

- Outlet Data
- RFID/Sensor Tracking
- Vehicle Management System

**Inventory Management**

- RFID/Sensor Tracking
- Point of Sale
- Social Media

**DIGITAL SOLUTIONS**

- **Demand and Supply Management**
  - Ensuring faster response to market changes and changes in the supply chain by utilizing structured and unstructured data gathered (such as sales, customer trends & profiles, purchase patterns, weather data, seasonal variations, clinical records, patient data, etc.)
  - **Benefit:** Accurate and near real-time view of order status for better decision making

- **Sensor-based Tracking & Optimization**
  - Tracking inventory real-time via sensors or RFID tags in order to have better visibility over various components of the supply chain as well as efficient optimization of the same.
  - **Benefit:** Saved about £30m of stock a year

- **Cross-Store Inventory Management**
  - Uses real-time data tracked and monitored in order to perform analytics for optimization of inventory levels, warehouse management, inventory wastage analytics, stock-out predictions to ensure cross-store omni-channel inventory management and the endless aisle.
  - **Benefit:** Helps Crocs cope with small retail space

**Data Sources**

- Market Trends
- Point of Sale
- Social Media
- CRM
- Weather/seasonality Data
- Customer Data
- Supplier Data
- Outlet Data
- Vehicle Management System
- Vehicle Management System
- RFID/Sensor Tracking

**Value chain and digital solutions for Supply Chain**
Risk Management

**DIGITAL SOLUTIONS**

**Risk Assessment**
- Risk & Compliance Solution primarily analyses compliance activities related to financial statements, risk reporting, risk management and monitoring, in relation to legislative guidelines also monitors key transactional data and alerts when there are potential risk exposures that may result in financial statement misstatements.

**SHELL**
- Data analytics helps internal audit teams monitor strength of access controls & deliver better audit accuracy
  - Benefit: Enhanced risk detection capability

**CAPGEMINI**
- Helped large U.S. financial company build a single repository to perform credit risk analytics on commercial and retail loan portfolios
  - Benefit: Enhanced business decisions to mitigate risk

**Forensic data analysis**
- The solution performs real-time monitoring for the prediction, identification, mitigation and prevention of frauds through forensic imaging of the storage media (HDD, mobile, etc.), analyzes data for fraud detection/cyber security incident and forensic analysis of network logs for source of attack, corporate policy violations etc.

**ZIONS BANK**
- Cross-channel fraud detection using Hadoop cluster-based data warehouse that houses about five petabytes worth of information from 140 sources (both real and near-time)
  - Benefit: Successful implementation of full cross-channel analytics across multiple commercial products

**Retail Inventory Shrinkage**
- Retail inventory shrinkage is the loss between point of manufacture and point of sale. Digital Solutions can drastically reduce the shrinkage numbers and help enterprises improve their risk management practices.
- Deployed a combination of item level RRD, advanced video analytics solutions and process improvements, resulting in a dramatic turnaround in shrink and productivity numbers for a 10-store region of American Apparel locations
  - Benefit: Reduced shrink by 75% in the region, converting it into one of the best-performing regions in the chain

**Value chain and digital solutions for Risk Management (Banks)**
New Digital Products & Services

Enterprises are also launching new digital offerings as well as monetizing their data. These offerings have helped companies to increase sales and improve efficiency. Monetizing data helps businesses engage with their customers in a better manner and facilitate real-time demand forecasting and marketing for their partners.

**New Digital Offerings**

A number of enterprises are coming up with new digital products as well as services which are in sync with the needs of today’s millennial customer.

**Benefit:**
New ways to sell (like spot selling) increases sales while faster line movement in stores increases store efficiency

**APPLE & VERIZON**

Apple’s new mobile point-of-sale (mPOS) system in collaboration with VeriFone in its U.S. based stores which is capable of accepting EMV

**Benefit:**
New ways to sell (like spot selling) increases sales while faster line movement in stores increases store efficiency

**Data Monetization**

Data monetization refers to generating revenue from data. Data producers and aggregator can sell, exchange or trade data.

**SAP**

SAP Ganges monetizes retail shop data to help CPG companies (P&G, HUL, Nestle, Mars, etc.) gain visibility through reporting and forecasting based on sales information aggregated from the retail stores

**Benefit:**
Helps CPGs in accurate real-time demand forecasting and marketing in retail stores

**TESCO**

Monetizes its Clubcard customer data by selling it to advertisers who use it for targeted promotions on Tesco’s Clubcard TV

**Benefit:**
Benefits by monetizing data as well as engaging with customers better

**Value chain and digital solutions for New Digital Products & Services**
Governments across the world are considering ‘going digital’ as the primary solution for not only increasing efficiency but also for the satisfaction and ease of their citizens. Governments of various countries have started allocating specific budgets towards digitization.

The Australian Taxation Office plans to use a technology based on voice identification and analytics to make the communication between citizens and the government more secure. This initiative will result in increased convenience and satisfaction for their citizens as well as savings of up to 45 seconds per call.

In November 2012, the UK Government launched an elaborate digital strategy called Government Digital Strategy (GDS) with a vision to be agile, flexible and digital by default.

The initiative aims to deliver efficiency savings of GBP 0.4 to 0.7 billion to citizens and GBP 1.7 to 1.9 billion to the government every year. GDS will also improve user experience by having a single portal for all government information and services.

**EDT Market Overview**

**SOURCES**

- **India**
  - Unlock unpaid taxes by analyzing people’s spending patterns
  - By 2015, the data analytics market in India is expected to reach $1.15 billion
  - Job generation of around 1,40,000 new jobs since 2010
  - Potential revenue generation amounts to 5% of India’s GDP i.e. $170+ billion

- **USA**
  - Spending on digital transformation and related projects
  - Energy Management System for American Air force
  - Will save more than USD 1 trillion over a decade for the US government
  - Projected to save the Air Force $2.5 million annually

- **UK**
  - Government developing strategic approach to data capability
  - By 2017 the big data marketing will generate £216 billion
  - UK government is spending £2.25 billion on big data revolution
  - Creation of 58,000 new jobs, 2012 onwards

**EDT market spend by Goverments worldwide**

Source: Zinnov Analysis and Research
03. ROADMAP FOR ENTERPRISE DIGITAL TRANSFORMATION
EDT adoption is gaining immense popularity. However, business leaders around the globe have some apprehensions towards EDT adoption. Below some of the key apprehensions stated by experts have been illustrated:-

- How critical is it for my business to transform digitally and how do I calculate the return on my digital investments?
- Should I build end-to-end digital capabilities within my organization or buy solutions?
- How do I mobilize my top leadership to garner company-wide buy-in for going digital?
- How do I define a step-by-step approach to transform my enterprise which is culturally and geographically diverse?
- How do I get the right talent for digital? Can I reskill my existing talent? How do I align my processes & technology for EDT?
Our discussions with some of the top business leaders have helped us in attaining in-depth understanding of the challenges faced by the enterprises when commencing on their digital journey. The key challenges include core business, enterprise readiness and implementation challenges. Core business challenges present the largest roadblocks with organizations facing issues such as lack of capability to create a business case for digital technology and concerns around ROI for digital initiatives.
Often EDT is confused with IT modernization. However, the approach for EDT differs distinctly from IT modernization. Over the last 5 years, enterprises have been focusing on modernizing their IT infrastructure. IT modernization entails modifying existing systems to incorporate advanced computer programming languages, software libraries, protocols, or hardware platforms whereas EDT is strategic, and involves transforming the organization for the next horizon of growth.

IT modernization projects are traditionally large duration projects. The below 3 IT modernization options are available for legacy systems:

**Migration** from legacy systems to new generation languages, databases or OS is a common cost-effective approach. Examples of this approach include migration from 2nd generation to 3rd or 4th generation languages; from legacy to RDBMS; from one RDBMS to another; migration from one OS to another. Software written in modern languages can also become monolithic and difficult to change. Thus, it also falls under modernization imperatives.

**Re-hosting** from legacy systems comprises running the same legacy applications on a different platform. This approach is often used as an intermediate stage. The examples of this option include re-hosting of mainframe applications on Unix/Linux or Windows.

**Re-Engineering** is considered to be the most efficient and agile way to transform legacy systems. Re-Engineering comprises re-building applications in a new technology or platform, with similar or enhanced functionality. Rebuilding applications by adopting Services Oriented Architecture (SOA) is a common example of this approach. This type of modernization can reduce operational costs drastically and help unlock benefits from the latest software functionality.
The approach required to digitally transform an enterprise is fundamentally different from the approach for IT Modernization. Although IT modernization is an enabler for EDT, the approach that is used for IT modernization cannot be used for EDT. The primary differences between the two are highlighted in the infographic:

<table>
<thead>
<tr>
<th>IT Modernization</th>
<th>EDT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stakeholders involved</td>
<td>CIO + CDO + Functional Teams + BU teams</td>
</tr>
<tr>
<td>Impact on business value chain</td>
<td>Low impact</td>
</tr>
<tr>
<td>Change management</td>
<td>Only within IT organization</td>
</tr>
<tr>
<td>Skills</td>
<td>Across multiple teams &amp; processes</td>
</tr>
<tr>
<td>Technology service providers</td>
<td>Existing IT skills</td>
</tr>
<tr>
<td>Approach</td>
<td>New digital talent</td>
</tr>
<tr>
<td></td>
<td>New-age service providers</td>
</tr>
<tr>
<td></td>
<td>Agile process – incremental &amp; iterative</td>
</tr>
</tbody>
</table>

**Differences between IT Modernization and EDT**
Zinnov has developed a four-step EDT process for all traditional enterprises undertaking the Digital Transformation journey. The process involves building EDT knowledge base and evaluating possibilities, assessing business and digital priorities, establishing a step-by-step methodology for digital readiness, and subsequently implementing digital solutions incrementally and iteratively.

**Knowledge**

1. Build EDT knowledge base and understand possibilities
   - Learning industry best practices
   - Determining key enabling technology
   - Understanding internal and external data sources
   - Strategies, initiatives and activities of digitally native enterprises & start-ups

**Digital Priority**

2. Assess business & digital priorities
   - Evaluating current state & desired state of business initiatives and prioritizing them in terms of:
     - Business Impact: Benefits and Risk
     - Ease of Implementation: People, Structure & Technology

**Organizational Readiness**

3. Establish a step-by-step framework for digital readiness
   - Determining a step-by-step map for digital transformation with respect to:
     - People (Skills, Talent Acquisition & New Roles)
     - Processes (Change Management)
     - Infrastructure

**Implementation**

4. Implement digital solutions incrementally and iteratively
   - Part by part implementation of digital solutions incrementally and iteratively along with the required IT infrastructure for those solutions

Zinnov EDT Framework
Enterprises need to study and analyze the digital disruptors – digital natives, start-ups and early adopters in order to learn and adopt best practices, understand their approach towards change management, talent management and prioritization of digital initiatives.

With the objective being to learn from peers and competitors how they manage their digital assets, it is essential for enterprises to understand their external & internal data sources, and evaluate data availability. In addition, enterprises need to estimate future data requirements and ascertain their digital readiness. Assessing digital readiness together with building capabilities in key technology areas such as mobility, analytics, cloud and sensors are pre-requisite for digital transformation.

The last step for enterprises focusing on digital transformation involves attaining in-depth understanding of how to collaborate with partners and service providers.

**STAGE 1**

Enterprises need to build their knowledge base on EDT for understanding varied possibilities before designing their digital strategy.

- **Understand key digital disruptors**
  - Digital natives
  - Disruptive startups
  - Early adopters

- **Learn best practices**
  - Change management best practices
  - Digital Prioritization
  - Talent management
  - Competitors’ digital strategy

- **Understand internal & external data sources**
  - Internal enterprise data
  - Real time machine & sensor data
  - Social media data

- **Understand key technology areas**
  - Mobility
  - Analytics
  - Cloud
  - Sensors

- **Collaborate with Partners & Services Providers**
  - Identification of key service providers suitable for collaboration
  - Assess key platform partners

**Building knowledge base around EDT**
It is essential for enterprises to assess their business priorities across the six horizontals of EDT based on their vision and goals for the future. This will help enterprises in attaining an understanding of the existing gaps, which can be addressed by a gamut of digital solutions. In a majority of cases, there exist multiple digital solutions to the same problem. With it being impossible to implement each and every digital solution, those belonging to the identified business priority should be assessed and prioritized based on the framework (given below).

**Business Priorities should be assessed based on the enterprise’s vision and goals in the future**

- Customer Targeting & Engagement
- Workforce & Partner Enablement
- Operational Excellence
- Supply Chain Optimization
- Risk Management
- Digital Products & Services

Digital solutions in the priority areas should be assessed and prioritized based on the following framework:

**DIGITAL SOLUTION PRIORITIZATION FRAMEWORK**

- Return on Investment
- Customer Base
- Customer Experience
- Correlation with business vision
- Monetary Cost
- Risk

**DIGITAL SOLUTIONS LIST**
- Digital Solution 1
- Digital Solution 2
- Digital Solution 3
- Digital Solution 4

**Approach to Digital Solution prioritization**

- Structure
- Technology
- People
- Stakeholder Buy-In
Enterprises need to assess the organization structure, people, technology and stakeholder buy-in in order to determine the ease of implementation of each digital solution. The business impact for each digital solution should be evaluated based on return on investment, customer base, risk assessment, and customer experience & satisfaction.

<table>
<thead>
<tr>
<th>BUSINESS IMPACT</th>
<th>EASE OF IMPLEMENTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ROI</strong></td>
<td><strong>Structure</strong></td>
</tr>
<tr>
<td>Impact on earnings vs-à-vis investment</td>
<td>Ease of organization restructuring</td>
</tr>
<tr>
<td>Impact on time to completion</td>
<td>Ease of realignment of existing roles</td>
</tr>
<tr>
<td><strong>Customer Centricity</strong></td>
<td><strong>People</strong></td>
</tr>
<tr>
<td>Impact on Customer satisfaction</td>
<td>Ease of creation of New Roles</td>
</tr>
<tr>
<td>Impact on market share</td>
<td>Ease of realignment of existing roles</td>
</tr>
<tr>
<td>Impact on new customer base</td>
<td>Availability of digital talent</td>
</tr>
<tr>
<td>Impact on customer retention</td>
<td>Ease of acquiring digital talent</td>
</tr>
<tr>
<td>Impact on customer attrition rate</td>
<td>Ease of re-skilling existing talent via L&amp;D programs</td>
</tr>
<tr>
<td><strong>Decision enablement</strong></td>
<td><strong>Technology</strong></td>
</tr>
<tr>
<td>Impact on real-time data-driven decision enablement</td>
<td>Presence of/ ease of access to required network</td>
</tr>
<tr>
<td>Impact on gauging the decision outcome</td>
<td>Presence of/ ease of access to required devices</td>
</tr>
<tr>
<td><strong>Correlation with Business Vision</strong></td>
<td><strong>Stakeholder Buy-In</strong></td>
</tr>
<tr>
<td>Digital strategy aligning with business model</td>
<td>Resistance at the senior leadership level</td>
</tr>
<tr>
<td><strong>Cost &amp; Risk</strong></td>
<td></td>
</tr>
<tr>
<td>Risk-benefit analysis</td>
<td>Long term</td>
</tr>
</tbody>
</table>

**Approach to Digital Solution prioritization**
The following is an illustrative of Digital Prioritization for a retail company. Digital solutions which are easier to implement and have a high business impact as well include:

- Customer-centric solutions (such as Customer Intelligence and Customer Gamification)
- Workforce and partner enablement solutions (such as Workforce Collaboration)
- Supply chain solutions (such as Demand Planning)
Large enterprises willing to drive their digital transformation roadmaps will need to focus on multiple initiatives. This includes relooking at their organization structure and building capabilities for a digitally enabled organization. Organizational re-structuring will result in creation of new roles such as Chief Digital Officer, Data Scientist, and Data Visualizer. Enterprises can adopt the below stated three methods/approaches to drive EDT:

### Structure, People and Technology form three key pillars of the framework.
Structure involves restructuring of the enterprise and creation of new roles & responsibilities. People aspect focuses on building digital skillsets for EDT, digital talent acquisition, and exploring skill availability by geography. The technology aspect focuses on the incremental modernization of the enterprise’s existing IT infrastructure in order to enable implementation of the digital solutions.

#### STAGE 3A
**Organization readiness - Structure**

Large enterprises willing to drive their digital transformation roadmaps will need to focus on multiple initiatives. This includes relooking at their organization structure and building capabilities for a digitally enabled organization. Organizational re-structuring will result in creation of new roles such as Chief Digital Officer, Data Scientist, and Data Visualizer. Enterprises can adopt the below stated three methods/approaches to drive EDT:

**STAGE 3**
Post shortlisting the digital solutions to be implemented, it is essential for enterprises to establish a step-by-step ‘How To’ framework for enterprise digital-readiness.
The Chief Digital Officer (CDO) led structure consists of a digital team led by CDO directly reporting to the CEO. The CIO position is independent and would be responsible for IT modernization and maintenance projects. The BU (Business Unit) led decentralized structure is comprised of digital heads of each BU who liaison with the digital team led by the CIO. The CIO led structure comprises the centralized digital team (including the digital head) reporting to the CIO.

Apart from restructuring the organization based on digital requirements and ease of restructuring, enterprises also need to create new roles for EDT. In order to build these capabilities, firms will need to invest in skills in areas such as Machine Learning, User Interface Design & Development, Mobility, and Data Analytics.

<table>
<thead>
<tr>
<th>Responsibilities</th>
<th>Skills Required</th>
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<tbody>
<tr>
<td><strong>Chief Digital Officer</strong></td>
<td>• Technology &amp; Business Expert</td>
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<tr>
<td></td>
<td>• Collaborative skills (with CIO &amp; CMO)</td>
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<tr>
<td><strong>Data Scientist</strong></td>
<td>• Data Analytics</td>
</tr>
<tr>
<td></td>
<td>• Platform Expert</td>
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<tr>
<td><strong>Data Visualizer</strong></td>
<td>• UI/UX</td>
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<tr>
<td></td>
<td>• Multimedia (Audio &amp; Visual) Skills</td>
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<tr>
<td><strong>Product Engineer</strong></td>
<td>• Software Product development</td>
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<tr>
<td></td>
<td>• Agile Methodologies</td>
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<tr>
<td><strong>Solution Architect</strong></td>
<td>• Mobility</td>
</tr>
<tr>
<td></td>
<td>• Software Product development</td>
</tr>
<tr>
<td><strong>DevOps</strong></td>
<td>• Software Product development</td>
</tr>
<tr>
<td></td>
<td>• Agile methodologies</td>
</tr>
<tr>
<td><strong>Scrum Master</strong></td>
<td>• Software Product development</td>
</tr>
<tr>
<td></td>
<td>• Mobility</td>
</tr>
<tr>
<td></td>
<td>• Data Analytics</td>
</tr>
<tr>
<td></td>
<td>• UI/UX</td>
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<tr>
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<td>• Software Product development</td>
</tr>
<tr>
<td></td>
<td>• Agile Methodologies</td>
</tr>
<tr>
<td></td>
<td>• Business Knowledge</td>
</tr>
<tr>
<td></td>
<td>• Communication Skills</td>
</tr>
</tbody>
</table>

Responsibilities and skills matrix for EDT
Source: Zinnov Analysis and Research
Stage 3B
Organization readiness – People

Traditional companies are employing varied strategies to build these digital skillsets. These strategies range from adopting innovative recruitment methods, conducting training programs, to entering strategic partnerships. A majority of companies are also acquiring mobile, social and technology firms. Acqui-Hire or acquisition with the intent of hiring talent is emerging as a common strategy adopted for sourcing talent.

**Caesars Entertainment** hired analytics talent from CapitalOne (mature vertical for analytics)

**L’Oreal** Gamified their Recruitment Process

**American Express** launched $100M fund to invest in Digital Commerce Startups

**Nike** opened up an accelerator to partner with tech start-ups through an Incubator Program

**Tesco** bought 80% stake in BlinkBox

**Walmart** made Several Acquisitions of Mobile, Social and Technology Firms

**P&G’s** Employee Exchange Program with Google

**Intel’s** Digital IQ Training Program & Digital IQ500 Program

**Samsung** has partnered with University of California, San Francisco (UCSF) to set up a digital health innovation lab

**Facebook** acqui-hired Threadsy, an integrated social platform

**Twitter** acqui-hired Lucky Sort and retained Big Data Visualization Team while Lucky Sort was shut down

Strategies for building digital skillset
Bay Area, New York City and Bangalore have the largest EDT talent pool, followed by London, Beijing, and Pune-Mumbai region in India. With a strong technology ecosystem of MNC R&D centers, service providers, IT global in-house centers, and startups, India is well placed to play a key role in the digital era. Indian talent pool can potentially power the digital transformation for enterprises around the world.
Stage 3C
Organization readiness – Technology

Enterprises also need to modernize their IT infrastructure in order to undergo digital transformation. IT infrastructure needs to be modernized incrementally and iteratively based on the EDT solutions being implemented during that period.

Incremental and iterative approach to IT Modernization
It is not essential to complete entire IT modernization before implementing the digital solution; only people, technology and process associated with that particular digital solution need to be completed. The process can be implemented step-by-step in an incremental manner. This reduces time-to-market and helps in building organizational capabilities that are responsive to sublime and dynamic market conditions of today.

Implementation: Once enterprises are digitally ready, EDT solutions need to be implemented incrementally and iteratively.
Agile methodology is used for development of digital solutions. The same has been illustrated below. Methodology being highly collaborative starts with a prioritized bucket list of features. Implementation teams need to take a call on which features need to be part of the sprint. This is followed by preparing people, organizational and technology changes required for the solution sprint. Digital solutions are then implemented incrementally and iteratively. The process is repeated until the working solution is tested and finalized.

**AGILE DEVELOPMENT OF EDT SOLUTIONS**

- **Create Sprint Backlog**
- **Prepare People, Technology & Org Structure feature by feature**
- **Update Product Backlog**
- **Sprint Review**
- **Implement Digital Solution incrementally and iteratively feature by feature**
- **Working Solution**

Prioritized EDT solutions should be implemented in an iterative and incremental manner.
Persistent follows user experience-driven incremental and iterative approach to EDT. The approach acknowledges that IT Modernization and EDT are different. A similar approach needs to be followed by businesses for a successful transformation program.

**CASE STUDIES**

**Think Vision:**
- **Build to a Roadmap**
- **Focus on User Experience**
- **Incremental & Iterative Development**
- **Organize Digital Team and leverage Disruptive Technology**

**Experience design lifecycle for design-driven-development through 3 distinct stages:**
- Inspiration
- Ideation
- Implementation

**Persistent’s approach to EDT**

- Differentiate between EDT and IT Modernization based on their respective impact on the business
- Define roadmap based on business needs while focusing on building platform to create derivatives on top of it
- Experience design lifecycle for design-driven-development through 3 distinct stages:
  - Inspiration
  - Ideation
  - Implementation

- Short and rapid cycles using Agile methodologies scaled up to the top to ensure agility in enterprise-level programs
- Feedback loop after each cycle to learn from the outcomes of the previous cycle and tweak for the next

**Persistent’s approach to EDT**

Source: Zinnov Analysis and Research

Digital team is organized in multiple layers:
- Business Team
- Middleware Team
- Platform Team
- SMAC capabilities are leveraged along with:
  - Curated data platform created to aggregate, benchmark and analyze data (DataStack 3.0)
  - Standardized API layer defined
  - Task-specific apps
Enterprise Digital Transformation (EDT)

FUTURE SCENARIOS

The road to digital transformation is paved with challenges. However, the failure to take measures to adapt can be fatal. Organizations can no longer ignore the threat posed by upcoming digitally empowered firms. Our research indicates that 50% of the companies in the Forbes Global 2000 list will drop out between 2015 and 2020. Digitally native firms have succeeded in adopting new business models to create a niche for themselves. Traditional enterprises will need to transform themselves to stay relevant.

Digitally native firms such as Airbnb and Paypal have disrupted the hospitality and payment domains radically with their innovative business models.

HOSPITALITY INDUSTRY AVERAGE

- Market Cap: $2-15 Bn
- Employees: 100,000 - 150,000
- Year of Est: Pre-2000

AIRBNB

- Market Cap: $2.5 Bn
- Employees: 600
- Year of Est: 2008

PAYMENT INDUSTRY AVERAGE

- Market Cap: $10-100 Bn
- Growth Rate: 5-14%
- Online Transaction: 80-150 per sec

PAYPAL

- Market Cap: $63 Bn
- Growth Rate: 19%
- Online Transaction: 400 per sec

~1000

Number of companies that could possibly be churned out of the Forbes Global 2000 List between 2015 and 2020
Digital transformation provides a platform for modern enterprises to showcase unprecedented innovation and growth. A comprehensive digital strategy is at the core of organizations’ efforts to surge ahead of the competition. Traditional organizations have learned from their digitally native counterparts. They are leveraging digital strategies to transform their business and reap the rewards.
THANK YOU
Zinnov is a management consulting that is headquartered out of Bangalore, with offices in Houston, Valley, Gurgaon and Singapore. Over the last 10 years we have rapidly grown by working by delivering a gamut of consulting services to Fortune 1000 customers and reputed SMB organizations. At Zinnov, we help organizations globalize their businesses and improve people strategy. Our consulting solutions are based on rigorous research techniques, data analytics and peer communities. We aspire to add value to our customers by helping them maximise the benefits from the globalization initiatives.

Zinnov believes that Globalization is not a process or activity, but is a tectonic shift in the way organizations function; then whether it is about entering a new market or expanding into an existing one. It has implications on the culture of organizations, its people, and also various products and services delivered by firms. This tectonic shift is irrevocable and is probably one of the most important transformation agents for the next generation of global economics.

We also look at the fundamental changes in industries, macroeconomics and markets to understand their impact on globalization. At Zinnov, we strongly believe that the next generation global initiatives will be based on holistic global approaches rather than short-term expectations.

These beliefs have encouraged us in passionately taking up the mantle of leading the industry on to the path of globalization. We have acted on this passion by undertaking multiple initiatives to bring together two different advocacy groups of globalization and challenge them to look at it from the prism of impact on global economics.

We call the amalgamation of these initiatives the “Zinnovian Way”!
Globalization Advisory Services:

Our globalization advisory services are structured to help our customers transform into efficient global organizations, ready for the next decade of globalization.

We have helped our customers with:

- Globalization Strategy Definition
- Global Sourcing Strategy
- Global Center Set Up & Consolidation.
- Global centers maturity and Competency planning
- Peer Group Benchmarking
- Partner Selection & Management

Market Expansion Advisory Services:

At Zinnov, we help companies enter emerging markets as well as succeed in existing ones. We provide great deal of specific and comprehensive insights to our clients that help them gauge opportunities prevailing in the market, thereby advising a suitable market expansion strategy. There are four clear areas where we help our customers:

- Emerging Market Opportunity Assessment
- New Product Ideation & Solution Validation
- Business Planning & Go-To-Market Strategy Definition
- Sales Enablement Support
Digital Transformation Advisory Services:

We help organizations navigate their digital transformation journey by helping them structure their people, processes and technologies to succeed in a digital era. We help customers build their knowledge base, analyze key digital disruptors and formulate strategies for collaboration with vendors and partners. We also facilitate the prioritization of digital solutions for organizations. We provide advisory services to clients to help them implement their digital transformation strategy using agile processes and infrastructure.

- Digital Readiness Assessment
- Digital Transformation Roadmap Definition
- Digital Transformation Sourcing Strategy
- Organization Restructuring and Change Management
- Partner Selection & Management
- Digital Transformation Program Management
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