



# The Business Case for Investment in Technology

July 2019



# Approach of the study

For this paper, we have taken our natural approach, as of the CFOs. We have looked at this issue in a way which is impacting business performance today and how it is expected to transform business models of the future. Our interest in this subject, stems from our need to answer the following questions – ‘How businesses can remain competitive and relevant in a changing environment of technology?’; ‘How should we assess investment and measure returns when we invest in digital technology in the core delivery systems like Manufacturing, Services Delivery and Logistics, in market functions like Marketing and Sales and in support function processes?’ Lastly, ‘how should an organization invest in resource allocation to face the challenge of disruptive technology in its industry?’

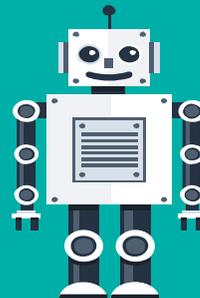
It will be apparent from the paper that the ambiguity about returns on investment in automation and in digital technology varies with the area of investment being considered – Where there is precedence in the same industry and the investment is in tangible assets or systems, it is comparatively easier to project returns, examples being the cases of manufacturing, logistics, energy management, etc. However, when investment includes intangibles like digital marketing, processes in finance or resource allocation for facing disruption, the ambiguity is higher. We have therefore elaborated more about the intangible areas.

# Structure and Scope of the study

Starting with the Market:  
Investment in Digital Technology  
in Marketing



Core Delivery Systems:  
Investment in Automation in  
Manufacturing, Logistics



Efficiency: Investment in Digital  
Technology in Energy  
Management



Investment in Finance  
Processes



# Starting with the Market: Investment in Digital Technology in Marketing

## 01



The questions we are faced with are as follows:

‘How much should we invest in Marketing?’, ‘What are the new investments to be made and what returns will they yield?’ and ‘Do we have a good means of measuring the returns?’

- The investment in Digital Marketing is really an investment in creating Customer Experience. 80% of customers researched by a leading consultancy firm felt that experience is as important as products and services. This is true for B2B customers as much as it is for B2C customers. Companies creating a better Customer Experience enjoy 6% to 10% improvement in revenue and higher category of margins.
- Customer Experience is created when customers engage digitally. This digital engagement takes place much before the customer’s engagement with Sales to actually buy a product or service. The early engagement could be through different media – the company’s website, direct communication from the company through mobile applications, personalized communication through email, and so on.
- To enable the early engagement, the company must have data about the customer’s preferences, traits, behavior trends and other related information. Using data, Digital Marketing

has to be used to design the customer experience to create the pull.

Investment has to be made in:

- Collecting data or obtaining the access to relevant data
  - Generating analytics
  - Storing and managing the data and analytics
  - Providing easy usage of the data and analytics to Marketers and Sales professionals
  - Creating content, customized advertising
  - Buying digital space
- A significant part of the investment would be in systems and applications. Transactional systems like the CRM or ERP need not be the central source of all customer related master data to be used for creating Customer Experience. Companies use Data Lakes which hold all the central information about customers. This may include Analytics results and predictions on traits, buying behavior and preferences.
  - Going forward, customer engagement shall be run by AI, Machine Learning and software. Voice, Augmented Reality and Virtual Reality shall be used increasingly for customer experience. (Nissan, Ikea, Caterpillar are some of the companies leveraging these technologies to create customer experience).

- Efficiency: Applications can now manage communications with customers, track customer queries, address such queries by the company's customer care or sales teams and generate the final outcome. Just by monitoring and visibility, this process can become very efficient, improve Customer Experience and therefore, business.

### The Challenge

- The Digital Curve gets steeper as you climb it: While all of the above are promising, the fact is that companies struggle with them. A BCG study shows that most companies could not link their market data across multiple customer touch points, lacked the level of automation required and could not attribute value to the touch points.
- Data may follow Moore's law and double every 2 years. Businesses need the capability to store and analyse huge volumes of data and use it with speed. This need for speed is leading to a preference for in-house control of data rather than outsourcing it to agencies. A data ecosystem can be created with storage along with processing capability which is being used from the cloud. Marketing professionals have to be trained to use data analytics.

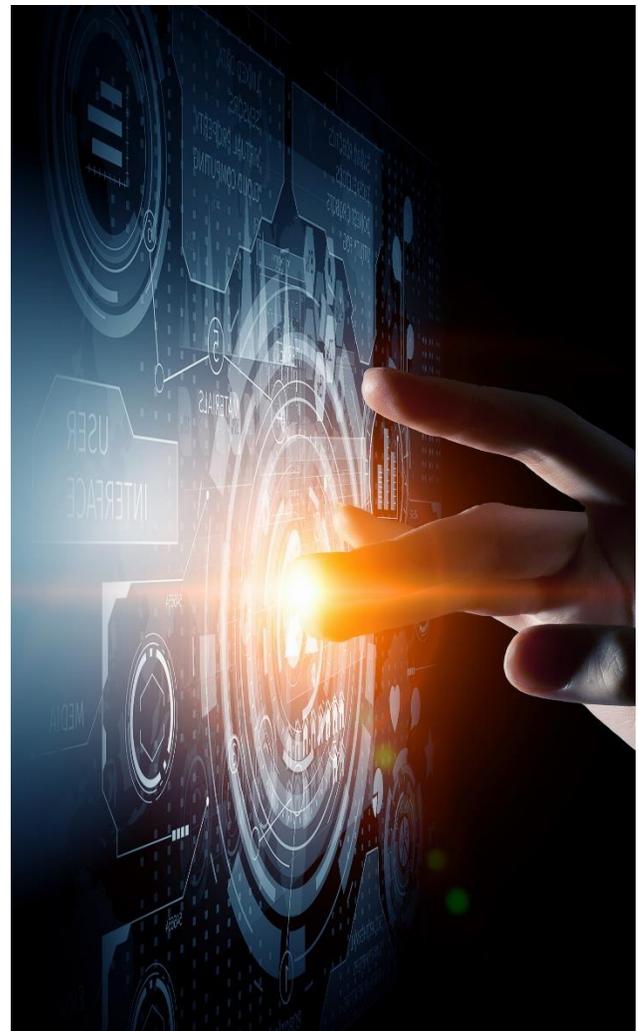
### Show me the money!

- A survey shows that companies are typically spending 1/3rd of their marketing budgets on digital marketing.
- There can be several metrics used by the Marketing team to measure performance. From the CFO/CEO's viewpoint however, we must look for Marketing effectiveness through lead generation, conversion of leads and cost per lead to margin ratio. Some industries will look for cost per lead to Revenue generation.
- Following is an example of metrics which can be used:
  - Track the number of Leads generated by a digital marketing campaign
  - Track Lead Conversion. Say, 40%
  - Measure Cost per Lead by allocating the marketing campaign cost on the number of leads. Say, Rs 1 lakh per Lead
  - With a 40% conversion rate, the Cost per Customer Order is Rs 2.5 lakhs
  - Compare the cost of Rs 2.5 lakhs with Margin per customer order

(Point to note from the above example is that a 40% conversion rate is low and it raises the cost per customer order. It shows gaps in Sales effectiveness or Marketing effectiveness.)

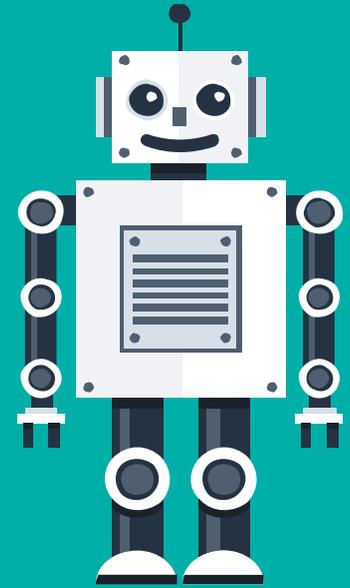
Another option is to compare cost per customer order to revenue generated per customer.

- For an investment decision on digital technology, assess the return on investment by the projected margins for customer orders to be generated. Work through the lead generation, conversion and cost per lead projections to arrive at above. This could be a multi-year investment and return plan.
- For investment in digital technology in many areas, it is suggested that we consider the 'Agile' approach, which makes it possible to take the project in short phases and correct course as required. This is a Design Thinking methodology which is explained in detail towards the end of the document.
- There is a long term valuation impact of Digital Marketing. This impact is on the valuation of the company's brand - while this does not show up in the balance sheet and is not reckoned in the normal course of business, it has an impact on the company's valuation.



# Core Delivery Systems: Investment in Automation in Manufacturing, Logistics

# 02



Internet of Things (IoT) has opened up a world of opportunities. One main reason is a broader adherence to open standards (such as Ethernet) and technology breakthroughs in data aggregation middleware. As the cost of connectivity has fallen, all sorts of devices can now be easily connected. This can be in manufacturing as well as in the full supply chain.

Plant managers today have access to 10 times more information about their plants than they did 20 years ago. IoT allows facilities to now monitor new variables, like vibration of machinery, which was cost-prohibitive in the past. Lower entry costs are enabling a granular level of data on existing assets.

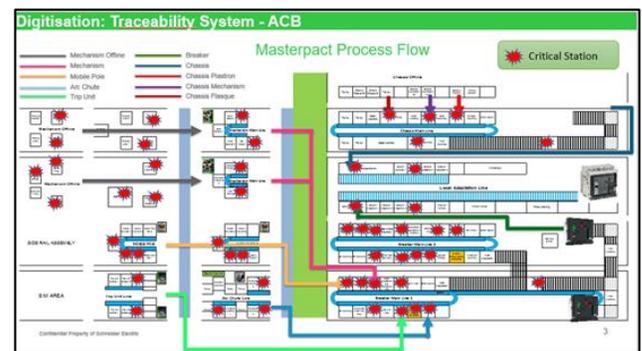
Connected devices and equipments in a manufacturing infrastructure are the base. Using this platform, data reserves are built. Using software and machine learning, analytics are developed to provide insights and predictive indicators. Dashboards are used for command and control and for analytics results.

The investment in digital technology is therefore in connected equipment, data generation capability, analytics and dashboards. This should lead to cost efficiency, higher reliability and safety.

## Reference Cases

### A. Automation: Digitisation of Process Controls

Capture of live performance data in a production process, live data display with analysis.



## Benefits:

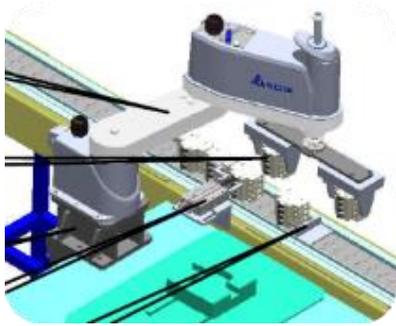
Reduction in material scrap and efforts leading to reduction in re-working cost and wastage of materials.

Reduction in inspection and control monitoring time by 50%.

ROI: 16 months

### B. Automation: Machine Loading/Unloading by Robots

Interfacing with existing machines, installation of a robotics system for loading and unloading components in a manufacturing process.



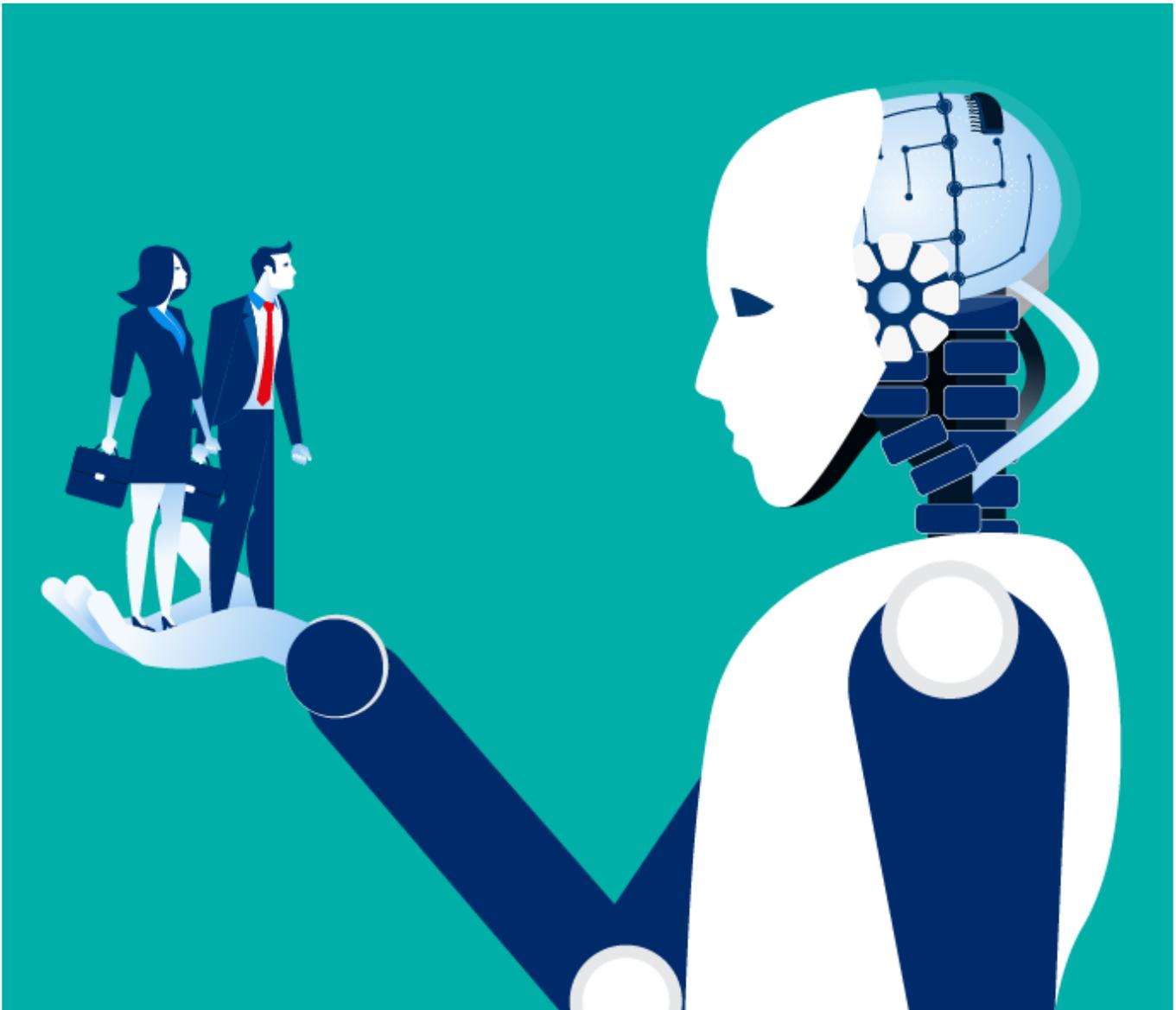
Delta Make Scara Robot

- Replacement of Manual Repeated Task .
- Minimal Changeover.
- Can be installed in same production Line.
- Auto rejection.

#### Benefits:

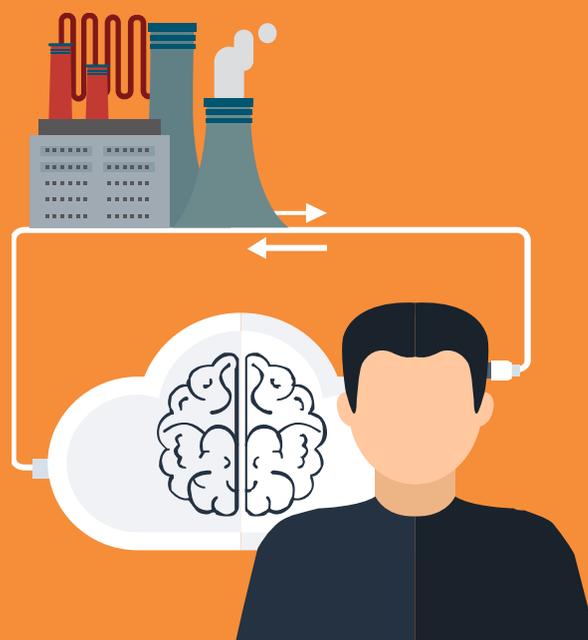
Speed and efficiency, reduction in number of operators, easy scalability, auto rejections.

ROI: 2.6 years



# Efficiency: Investment in Digital Technology in Energy Management

## 03



Global energy demand is expected to double in the next 40 years. Three mega-trends drive this increase in demand: urbanization, digitization, and industrialization. The combined effects of these three mega-trends will result in an increase in energy use by more than 50% by 2050. To avoid catastrophic climate change, we also need to reduce our emissions by half. Therefore, to resolve this energy paradox, we need to be 3 times more efficient in the use of energy.

Opportunities arise from the convergence of Operational Technology (OT) and Information Technology (IT), driven by the Internet of Things (IoT) to achieve greater levels of energy efficiency. When a facility can use embedded intelligence in machines, energy distribution, consumption and monitoring devices, to plan and manage its energy consumption, it can become more efficient.

The following is an illustrative table of Best in Class energy consumption in a facility, be it an office, a hotel or a hospital, compared to Average Energy Consumption. The potential is apparent. The Average Energy Consumption would vary for manufacturing units depending on the industry and set up.

Sector	Best in Class Energy Consumption	Average Energy Consumption
Office	~ 60 kWh/m <sup>2</sup> .year	~ 250 kWh/m <sup>2</sup> .year
Hotel	~ 200 kWh/m <sup>2</sup> .year	~ 416 kWh/m <sup>2</sup> .year
Hospital	~ 150 kWh/m <sup>2</sup> .year	~ 300 kWh/m <sup>2</sup> .year

Different models exist for making investment in energy automation. A simple 'capex' model needs investment upfront and remains the dominant model. 'Pay for use' models help to amortise the charge over the life cycle of the asset without capital expenditure. 'Lease finance' models include a tripartite arrangement with the seller and the finance company. There can also be a combination of capex and opex. It is worth assessing all these options according to the need of the business, before taking a decision.

# Investment in Finance Processes

## 04



The dilemma and the prioritization becomes even more acute when it comes to investing in Financial and business processes. The benefits are realized long term and there is little perceptible impact on Revenue or margins in the short term. Though we know as CFOs that deprioritizing technology Investments in processes can lead to huge value erosion.

We can use the below framework to identify the key challenges faced by organizations and measures/ metrics which we can use to value ROI of such investments.

We list the four core Processes within which all the sub-processes of any organization can be mapped:

1. Order to Cash: Sales planning to customer ordering to cash realization
2. Procure to Pay: Purchase planning to procuring to making payments
3. Record to Report: Recording all transaction accurately and reporting externally
4. Hire to Retire: Lifecycle of all people related processes (especially critical for Services organization)

We map three aspects to be addressed, against each core process:

1. People
2. Technology/ Systems
3. Results/ metrics

In the framework as below, we capture the challenges and thereby areas to improve and automate, for each core process:

Processes/Axis	People	Technology/Systems	Results/Metrices
Order to Cash	<ul style="list-style-type: none"> <li>High quality talent time spent on mundane tasks on booking orders</li> <li>Poor Sales force efficiency</li> </ul>	<ul style="list-style-type: none"> <li>Order management systems not keeping pace with Sales growth aspirations</li> <li>Poor Customer interfaces not keeping pace with Customer expectations</li> <li>Contract management systems not keeping pace with Obligations</li> </ul>	<ul style="list-style-type: none"> <li>Poor customer experience/NPS</li> <li>Higher working capital</li> <li>Lost sales</li> </ul>
Procure to Pay	<ul style="list-style-type: none"> <li>Bureaucracy and approval laden teams</li> <li>Procurement time spent on managing approvals rather than negotiations</li> <li>Penny wise pound foolish oriented goals</li> </ul>	<ul style="list-style-type: none"> <li>Cumbersome payment systems</li> <li>Outdated procurement systems</li> <li>Systems lack analytics and built for approvals</li> </ul>	<ul style="list-style-type: none"> <li>Low savings and high cost of procurements</li> <li>Frauds and misappropriations</li> <li>Delay in payments</li> </ul>
Record to Report	<ul style="list-style-type: none"> <li>High caliber finance talent doing data entry and elementary maker/checkers</li> <li>High chance of human error</li> <li>Fatigue in Finance teams</li> </ul>	<ul style="list-style-type: none"> <li>Financials systems not keeping pace with changing regulatory and compliance regimes</li> <li>Analytics not forward looking</li> </ul>	<ul style="list-style-type: none"> <li>Lapse in internal control</li> <li>Unpredictability of financial results</li> <li>No timely RCA</li> </ul>
Hire to Retire	<ul style="list-style-type: none"> <li>People unfriendly practices and policies</li> <li>Unable to attract top talent</li> </ul>	<ul style="list-style-type: none"> <li>People management systems not keeping pace with Millenials way of working</li> <li>Time tracking systems not keeping pace with billing systems ( Service companies)</li> </ul>	<ul style="list-style-type: none"> <li>High attrition</li> <li>Billing leakages</li> </ul>

As you can see, most of these challenges are known, but it's easy to assess the trade offs if we put it in the above framework.

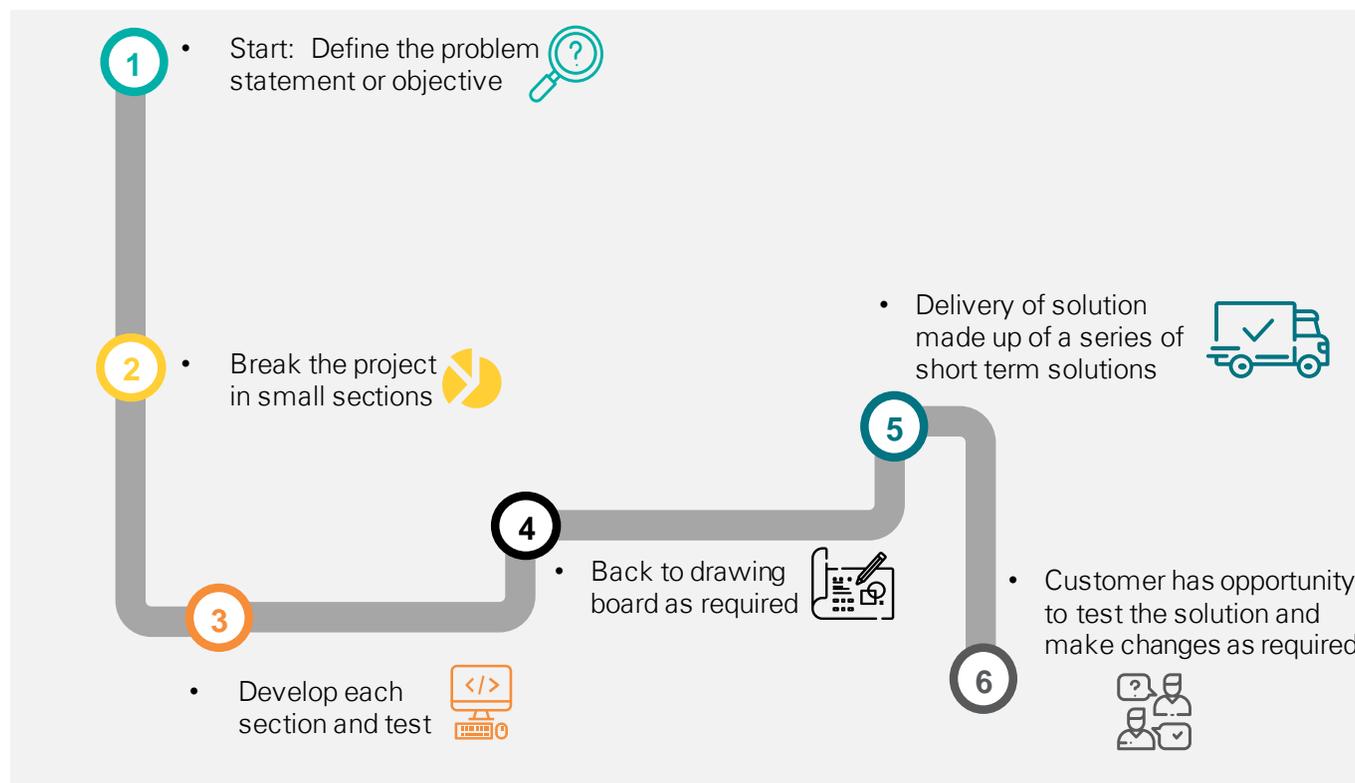
Here is the outcome for a business which invested in these processes:

Processes	Technology disruptions	Measures and Outcomes
Order to Cash	<ul style="list-style-type: none"> <li>Order booking systems fully integrated with warehouse and logistics management systems</li> <li>Use of sophisticated demand planning and forecasting tools using heuristics</li> <li>Use of Big data analytics to forecast customer behavior and consumption patterns</li> <li>Using BOTS for raising Purchase orders</li> </ul>	<ul style="list-style-type: none"> <li>Industry leading NPS</li> <li>TAT for PO raising cut down from 4-5 days to 30 mins</li> <li>Forecasting accuracy of 95%+</li> <li>Negative working Capital cycles</li> </ul>
Procure to Pay	<ul style="list-style-type: none"> <li>Direct ordering by users with in built maker checker on simple to use tools</li> <li>Online bidding tools for comparative cost quotes</li> <li>Invoice processing and reconciliations using BOTS</li> </ul>	<ul style="list-style-type: none"> <li>On time payment of 95%+</li> <li>Cost savings of 20%-30% on high value procurements</li> </ul>
Record to Report	<ul style="list-style-type: none"> <li>Sophisticated planning and budgeting tools which integrates with ERPs</li> <li>Use of blockchain for Account reconciliations.</li> </ul>	<ul style="list-style-type: none"> <li>Higher level of system controls vs manual controls</li> </ul>
Hire to Retire	<ul style="list-style-type: none"> <li>Career management tools integrated with training tools for employees</li> </ul>	<ul style="list-style-type: none"> <li>Lower Attrition</li> <li>Higher employee productivity</li> </ul>



# Process of investing in phases

When new areas are being considered for investment, the returns are not entirely clear in the beginning for decision making, we recommend the use of Design Thinking methodologies. 'Agile' is one such methodology, which is being used for development of solutions. The essence of this model is to start with articulation of the problem statement and then to develop a solution through an iterative process, testing it after short sprints and correcting course, as required. A brief outline of the same is below:



The advantages are obvious. We must ask for opportunities to test the solution in short phases, so that investment can be planned in phases, there is clarity on the output and the impact of the output on business, so that the returns are more assured. Challenges are in breaking the solution in small pieces; though this can be done more effectively with digital technology. Also, the engagement with the service provider tends to elongate, which may have to be managed effectively.

## Digital strategy

At the outset, it is important that organizations have a thought through overall Digital Strategy and agenda that cuts across the organization and has at least been through a certain level of prioritization given the limited resources of time and money. This digital agenda should align with the organizations purpose, vision and strategic plan as a business entity.

While most Corporations are still early in their journeys, a few are thinking of first defining the Digital 'Big Rocks' for example Consumer, Customer, Marketing, Supply chain and Enterprise and the underlying enablers such as data and analytics, digitally ready IT systems, digital culture and operating model.

It may be difficult for an enterprise to develop a business case for technology through fragmented, uncoordinated efforts. The business case would be stronger when seen through the lens of integrated automation and analytics, cutting across people, process and technology.

## Conclusion

Investment in digital technology will lead an enterprise towards competitiveness, growth and efficiency. The challenge is to assess how much, where and at what pace. We can use the learning to date which exists, for which we have articulated some approaches above. Outcome is measurable; we have to find the right metrics and connect them to value creation as we understand it. The digital curve is steep, and no organization can claim to be on top of it. We iterate as we progress, and therefore the methodology of Design Thinking.

The CFO must work with other CXOs to develop the right metrics for assessing outcome in technology investments. Good example is for Digital Marketing. Enterprise resource allocation may have to be tweaked in the course of these investments. We have to assess new resource investments as well as a part of the organisation's initiative to adapt disruptions.

The quantum of investment in digital technology may be decided for a particular process, in which case it can be quite small, and can be agreed for the enterprise as a whole. Some organisations have started allocating 3 to 5% of their total expenditure budget on digital initiatives, and declaring the same to investors.

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