Exploration of Service Transition Strategies – Evidence from IT Systems Integrators

**A dissertation
presented in partial fulfilment of the requirements for the degree of
Executive Fellow in Management
at Indian School of Business**

**Chiranjib Bhattacharya(111810012)
August 2022**

**Dissertation Committee:
Prof. Sundar Bharadwaj (Chair), Prof. Sudhir Voleti
and
Prof. Rajendra Srivastava**

Research Objective - "Identification of Transformation Strategies for Product Centric IT Systems Integration firms under competitive & disruptive pressures to enhance firm performance through Service Transition".

Research Procedure - The research procedure includes literature review to derive insights from relevant journals and consultants' reports and apply these insights to conduct an experiment on transformation in a firm which is directly affected by changing customer needs and innovation. A number of research questions are tested through field experiments.

The procedure also includes interviews of industry experts on how the industry has been impacted by change in customer needs and innovation and whether they feel transformation through specific services is important. If yes, then their recommendations on specific services are Important

Finally the outcomes of the experiments are analysed enabling us to identify specific strategies of transformation of a product centric firm to a consulting one, through service transition.

OVERVIEW

- **Introduction**

- **Literature Review**

- **Key Research Questions**

- **Interview Findings**

- **Approach, Design and Methodology**

- **Theory Testing and Field Experiments**

- **Data Interpretation, analysis and Results**

- **Conclusion, Limitations and Scope for further research**

Chapter 1
Introduction

IT Systems Integration firms are facing margin & cash flow pressures in spite of possessing technical and sales skills because of two factors – changing customer needs and Disruptive Innovation. Changing customer needs create a challenge for companies dependent on IT Infrastructure products while disruptive innovation create alternate cost effective solutions, shrinking the market of IT Infrastructure products.

Enough evidence is available which reveals that customer organizations have changed their preferences and have started embracing emerging technologies and optimization techniques to remain profitable and competitive in their business. CXOs are trying to generate free cash flow by minimizing capital expenditure. Today's CXOs are no longer ready to maintain huge white elephant like infrastructure and would like to minimize the capital expenditure on infrastructure. The objective appears to be to create free cash flow by moving infrastructure and applications to lean subscription models rather than investing in capital expenditure and the annual recurring maintenance expenditure, incurred earlier. The free cash flow thus created can be used to deploy technologies like CRM, Warehouse management, supply chain management , analytics , digital marketing tools, which are expected to have a direct positive impact on the customers' business.

Customers need to maximize their ROI in their IT investments. They need to get rid of unnecessary expenditure and adopt cost effective agile and disruptive technologies, which will enable them achieve their business goals. Thus differentiated delivery is an attribute which has become extremely important in selection of systems integrators. The expectation from IT Services organizations is investment protection for the customers on one hand and availability of disruptive technology skills on the other, to create value in the customers' business.

With the progression of time and maturity of the hardware industry, prices have become extremely competitive resulting in shrinking margins for the systems integrators . Conservative commercial terms offered by the customers makes it even more difficult to generate profitability and cashflow. Hence there is an immediate need for Systems Integrators to transform drastically and create new profitable lines of business as well as change the nature and quality of the existing core business. Identification of strategies that work in a transformation journey therefore is extremely critical to create value for the firm, keeping in mind the evolving needs of the customers.

This research explores identification of specific strategies to transform product centric emerging IT Systems Integrators to compete under margin and revenue pressure, through service transition with an objective to enhance profitability, growth and healthier accounting metrics. After reviewing management literature, insights emerge around theoretical frameworks and constructs created. However the uniqueness of this research lies in directly rolling out strategies in an emerging IT Systems Integration firm, through an empirical approach, measuring and analyzing the outcomes. The outcomes are

expected to provide a direction to emerging IT Systems Integration firms as well as create scope for further research.

The research topic in general and the two themes mentioned (Change in Customer needs and Disruptive Innovation) in particular needs exploratory research, to establish that there is a constant change in customer needs in today's IT services industry and understand the implications of this change affecting an IT systems Integrator who had been focusing on goods' business and to establish that disruptive innovation has influenced the industry landscape significantly, how it has played a key role in creating challenges for existing Systems Integrators with focus on goods and what should be the strategies to transform the business to enable the organization handle the impact of disruptive innovation successfully.

Qualitative research is essential to provide deep insights into the problem, using individual interviews, consultants' reports and auditors' reports. In this case, the problem is of a unique nature and one is not looking at a mere generalizable and statistical solution. For example, we need to formulate a specific questionnaire for a particular industry leader of a client organization when we want his/her inputs on how their needs have changed and how they are reinventing their business models in view of disruptive innovation. Once we have an in-depth understanding of some client organizations' views and strategies, we get enabled to formulate our Hypothesis and then implement our transformation strategy. Similarly, an in-depth analysis of relevant consultants' reports can help us understand the change in customer needs and future trends created due to disruptive innovation. Auditors' reports can clearly provide all possible financial information about a firm and hence enables us to clearly draw conclusions on past performance and improvements, if any. Thus qualitative research, in this case, enables us to gain valuable insight into our target audience's needs, preferences and motivations.

http://www.askattest.com/blog/insight/ - Quantitative vs Qualitative research and how to use each

The need for transformation is evident from the following -

1. CXOs/ Consultants/ Business leaders/ Entrepreneurs' interviews on industry scenarios

2. Firm Situation- Cash flow pressures, shrinking margins.

3. Reports / articles on Roadmap and industry trends

4. Changing preferences of the customer – focus on emerging technologies for more cost optimization, productivity enhancement and achieving business goals. (Customer interviews/ Consultants' reports).

5. Management literature review.

Goods centric emerging Systems Integrators who are dependent on Original Equipment Manufacturers face margin and cashflow pressures mainly due to the following –

1. If the role of the Systems Integrator is limited to supply and installation of the products, there is hardly any room for margins. Therefore unless value addition is demonstrated by a Systems Integrator through services , the possibility of operating at waifer thin margins is high. Significant value addition may include management of a complex installation, Migration between multiple platforms, taking up stringent Service level Agreements, handling upgrades , implementation of softwares and even offering presales services on certain products. The bottomline is , that unless a Systems Integrator demonstrates value to the OEMs as well as the customers, achieving reasonable profitability appears impossible. Neither the OEM nor the customers see value in supply of products and simple installations . At the same time OEMs need Systems Integrators for multiple reasons like handling customer relationships, positioning products , competition information, commercial considerations like flexibility in offering payment terms and guarantees to customers , providing first level after sales support and installation. Customers also need Systems Integrators as certain policies followed by a number of organizations do not encourage direct procurement from OEMs . Most OEMs do not offer credit or bank guarantees to customers ; even in most situations direct services from OEMs are priced so high that few customers can afford a direct service model . It is therefore important for Systems Integrators to realize the potential of creating value and build expertise around presales, consulting services , implementation and support to extract profitability from transactions which otherwise would never strengthen their balance sheets, income statements and cashflow statements .

2. The other issue which most Systems Integrators find challenging is managing cashflows. In most cases they are required mandatorily to pay the OEMs upfront for goods and services. Since the Systems Integrators frontend the business, Customers pay them against milestones like delivery , installation, acceptance tests and even completion of warranty periods in some cases. Thus the low margins further erode owing to interest liabilities. Contractual issues like liquidated damages , penalty clauses for non performance are also borne by Systems Integrators in most cases .

Systems Integrators especially midsized ones therefore need to create business models which would generate adequate profits to enable them handle the above mentioned constraints . Product centric business creates market reach and strong relationships with customers , but unless a firm recognizes the associated service potential and transforms itself to deliver differentiated services with exceptional expertise, the advantage of having a footprint in the market by virtue of delivering products, is lost . For example, in the software

space there are products like Real Application cluster which provides availability on demand, to customers. If a Systems Integrator merely supplies this product to a customer the value addition is negligible. But if the Systems Integrator has the capability of implementing this software , it can command a significant margin for this competency .

However transformation of a product centric firm to improve firm performance requires careful consideration of multiple factors . Management literature mentions about research on margin pressures :-

"There have been research on Goods Centric Firms in B2B markets facing margin pressure as growth and profitability from equipment sales decline (McDonald et al 2016, Reinartz & Ulaga 2008, Tuli, Kohliu and Bharadwaj 2007)".

But how does a firm create the right service portfolio ?

There would be several relevant considerations like understanding the current product portfolio of the firm and its installed base, customer requirements and preferences , the services that would be in demand , how closely are these services related to the core product business, how to position the firm's service offerings , how to mobilise resources optimally to deliver services , to name some of the considerations.

- "Despite the growing importance of services, B2B manufacturers have little guidance on how to expand their service offering portfolios. They lack a comprehensive framework to understand when to make significant investments in particular kinds of services". (Cusumano et al 2015, Sawhney et al 2004)".

While management literature emphasizes the growing importance of services , there is hardly any empirical research exploring the results of a solution strategy .

"Empirical research that explores the outcomes of a solution strategy in B2B Markets is lacking (Lilen 2016)"

It is worthwhile to note that unless service transition is backed up by a strategy, the risks may outweigh the returns . Investment in resources and building a service or consulting portfolio may not yield profits in the initial few years but the outcomes should clearly move in a direction which makes it obvious that sustained effort would lead to significant growth in revenue, profitability , predictable cashflow, improvement in other relevant accounting metrics and perceived value of a firm.

- "Stanley and Wojcik (2005) find that half of all solution providers realize modest benefits while approximately 25% actually lose money".

So why services, is commonly asked by management practitioners who have enjoyed the comfort of running a product centric business ? We emphasise the evolving nature of customer preferences and disruptive innovation to answer this. On one hand product business is dependent on the capital expenditure pattern of the customers and may not be resilient to the economic cycles that drive this pattern, and especially for systems integrators, margins in services and consulting business is much higher than products .

- "Services in general have a higher margin than products (Anderson et al 1977, The economist 2000, VDMA 1998) and services provide a more stable source of revenue as they are resistant to the economic cycles that drive investment and equipment purchases".

To enhance margins and improve predictability of cashflow, IT Services firms are advised to move up the value chain with respect to their offerings . This movement from simple low value jobs to complex high value ones require a transformational approach , as observed by Linder and Li et al .

- "Moving up the value chain in the context of IT service providers refers to service offerings that are complex, knowledge based, of higher value and more transformational (Linder 2004, Li et al. 2008)".

However identification of appropriate strategies which lead to success in a journey up the value chain is critical. Literature provides theoretical insights into the critical success factors but there is hardly any evidence of empirical research on the subject. "There has been little empirical research on the effects of movement along the value chain in the academic literature . There has been little emphasis on identifying the factors important for success of these moves forcing practitioners to identify some factors, as per Anandasivam Gopal, Sabari Ranjan Karmegam , Balaji R Koka and William Rand 2020".

Another important factor which creates resistance for growth through service transition is the continuous demand from customers for free services from product centric firms.

"Customers who are used to getting services for free resist paying separately for them, even when the manufacturer launches an independent services business , as per Anees Gopalani , " A new model for service businesses in product-centric firms".

Unfortunately emerging Systems Integrators, in order to ensure product sales , end offering free presales , design, solution architecture , technology roadmap preparation and installation free. It is interesting to run an experiment to test which strategy works in creating a positioning for an emerging systems integrator resulting in additional revenues and profitability, while implementing a service transition. Once a goods centric systems integrator starts demonstrating implementation and consulting skills in domains which are critical for a customer, service revenues are expected to come in. This should lead to building a practice

around a domain, but continuous focus is necessary to build expertise, position the expertise and acquire multiple customers .

The key challenges therefore appear to be as follows-

1. Stiff competition
2. Lack of differentiation
3. Adoption of rapidly changing technology
4. Reducing margins

"(Source - E & Y report on Trends and Opportunities for IT Service vendors)".

Our research topic ie <u>**"EXPLORATION OF SPECIFIC STRATEGIES TOWARDS TRANSFORMATION OF PRODUCT CENTRIC IT SYSTEMS INTEGRATION FIRMS TO COMPETE UNDER GROWING MARGIN AND REVENUE PRESSURE THROUGH SERVICE TRANSITION WITH AN OBJECTIVE TO SIGNIFICANTLY ENHANCE PROFITABILITY, GROWTH AND ACCOUNTING METRICS "**</u> takes into consideration the above- mentioned challenges and analyses the outcomes of specific service transition strategies

Chapter 2

Literature Review

Review of extant literature leads to deep insights on service transition strategies. Worm – Bharadwaj – Ulaga – Reinartz in their research provide important novel insights for researchers about " WHY, WHEN, WHETHER firm's investment in solutions pay off. There are clear recommendations to address the areas of managerial concerns, i.e. business cases building for customer solutions and communicate potential gain of ROS from solutions to key stakeholders – Taking stock of potential positive and negative outcomes, whether industry is favorable to solutions. However, the authors observe that inspite of the growing importance of services products centric firms have little guidance on how to build their service offering portfolios." According to Cusumano et al. (2015, p. 559), they "lack a comprehensive framework to understand when to make significant investments in particular kinds of services'. Specifically, "empirical research that explores the outcomes of a solution strategy" in B2B markets is lacking (Lilien 2016, p. 549).

Worm – Bharadwaj – Ulaga – Reinartz emphasize that the critical issue of conducting "an empirical investigation to see if the financial benefits of moving towards solutions outweigh the risk" (Sawhney 2006, p.378) still remains to be researched. " Based on RBT (resource-based theory) of the firm and TCE (transaction cost economics), they examine important research questions like – Relationship between firms' solutions offerings and profitability, firm and industry conditions conducive to increase impact of customer solutions, and underlying mechanisms linking solutions to financial outcomes. They also identify the most critical question for B2B managers today i.e. which type of services to offer rather than whether to offer more services" (Cusumano et al.2015; Lilien 2016). They also observe that inspite of "conceptual insights into the nature of customer solutions, a systemic empirical examination of the financial performance outcomes of selling solutions still represents the key gap in the literature". This enables us to offer important research contributions through exploration of strategies to identify types of solutions that have high probability of creating firm profitability as well as empirically examine the nature of returns in specific services. We also examine the performance impact of solutions at the customer account level and empirically investigate the results of solution offerings at the firm level. We identify the evolution of solutions offerings and performance and arrive at deeper insights into the payback period of solution strategies as well as the associated challenges in achieving returns.

"Arguments based on Transaction Cost Economics suggests that solutions offerings reduce firm profitability caused by uncertainty about the behavior of customers, risks transferred to the solution provider or lack of economies of scale. At the same time, Resource Based Theory predicts that solutions offerings enhance profitability by enabling firms to attain a sustainable competitive advantage through customer

retention leveraging customer-specific knowledge, unique skills , long term contracts and understanding customer requirements and outcomes thereby satisfying the VRIO criteria - Valuable, Rare, Imperfectly imitable, and Organizationally exploitable." (Worm- Bharadwaj- Ulaga- Reinartz 2017, Macdonald et al 2016, Tuli et al 2007, Ulaga and Reinartz 2011, Palmatier et al 2007, Worm and Srivastava 2014). To address the unclear direction created by these competing predictions, two VRIO firm level moderators are identified by Worm- Bharadwaj- Ulaga- Reinartz – " Sales Capability and Value Creation Knowhow . '' Research findings indicate that sales capability and value creation knowhow positively moderate the relationship between solutions offering and firm profitability. Also "on average, enriching the service portfolio by providing solutions helps grow financial returns". We observe that these findings are based on conceptual literature, analysis of survey data, archival financial data and interview outcomes . Since this research aims at providing a direction to mid sized IT product centric Systems Integration firms, on a strategy to create resilience in business, it becomes important to run a transformational program in certain customer accounts and geographies by strategic deployment of sales capability and value creation knowhow. During this transformational program, we understand the conditions under which solutions lead to enhanced financial returns as well as the challenges faced while deploying firm-level moderators like sales capability and value creation knowhow. This research contributes by empirically building strategies capable of guiding a firm towards growth, profitability and cashflow.

There is literature examining the effect of Service Transition Strategies on Firm Value. As per Eric Fang, Robert W Palmatier, Jan- Benedict EM Steenkamp, ''the impact of a firm's transition to services on firm value remains relatively flat or slightly negative until the firm reaches a critical mass of service sales (20%- 30%), after which point they have an increasingly positive effect. Service transition strategies are more effective at enhancing value when the service offerings are related more to the firm's core business and when firms have more available resources (ie resource slack)'' . It is important to realise that strategies for effective service transition need to be guided by unique value propositions which are difficult to duplicate or imitate, are valuable to customers, should improve firm value through higher and more stable sales, cash flows and profits. (Vargo and Lusch 2004). Hence managers need to add intangible elements of service offerings to tangible core products to create an ideal fusion in the portfolios of product centric firms aspiring to transform into solution centricity. " Four major mechanisms are identified by Fang, Palmatier and Steenkamp- leverage of knowledge and resources, increased customer loyalty, loss of strategic focus and organizational conflict, through which service transition strategies affect firm value. While the first two have a positive impact the latter two obviously have a negative impact." While navigating through a transformational journey, it appears possible to test all these four mechanisms.

While Fang, Palmatier and Steenkamp make interesting observations about the advantages of the synergies and benefits created by an integrated product/service provider over off-shore product-only firms and local service-only firms, it is critical

to build these advantages through appropriate strategies. Also they make a very important observation related to the resource management of a firm and the firm's financial performance in the short run- " spreading a firm's resources between an existing business and a new business that requires new skills, capabilities, and competencies should have a negative impact on a firm's financial performance and ultimately on its market valuation, at least in the short run. These negative effects likely remain until the firm develops the core capabilities and competencies needed for the new business to compete effectively and for managers to learn to allocate resources optimally across the different domains".

This research draws motivation from the above - we find it relevant to understand how to avoid loss of strategic focus, organizational conflict and how to optimise resources and enhance customer loyalty to achieve value maximisation. We also take this opportunity of examining if inspite of deploying logical strategies and best practices, the resultant financial returns remain negative in the short run. The contribution made by this research creates a differentiator with extant literature by actually analysing the above through a direct empirical approach in a firm, while existing literature is based on secondary data.

"By investigations using RBV (Resource Based View), Service relatedness and Resource Slack are identified as important firm-specific factors and industry turbulence, growth and industry competition are identified as important industry-specific factors in literature ." (Black and Boal 1994, Amit and Schoemaker 1993, Jaworski and Kohli 1993). We formulate our strategy through investment in a firm keeping " Service Relatedness" and " Resource Slack " in mind and build on such strategy to arrive at an acceptable roadmap of transformation .

During the strategic transition from product centricity to solution centricity the probability of success obviously depends upon identification of the right consulting and implementation services. Existing literature recommends service relatedness as a key strategy while identification of transformational services – "when customers perceive a higher level of relatedness between firm's product and service offerings, they sense lower evaluation and performance risks and display higher loyalty toward the seller." – Eric fang, Robert W. Palmetier and Steenkamp (2008). "When the service offering is more closely related to a firm core manufacturing business, the knowledge developed and resources spill over (Varadarajan 1986)." This research explores the impact of selection of services lines of business applying service relatedness, empirically.

The other important firm – level moderating factor appears to be resource slack, which refers to the cushion of excess resources that the firm can use in a discretionary manner (Bourgeys, 1981). Allocation of resources to opportunities or requirements dynamically is a critical factor in enabling an optimized resource management strategy to ensure that the firm remains positive on profitability and cash flow during a transformational solutions strategy. Such a transformation has its own risks, right from the beginning as business leaders need to invest in resources and pick up the right business to cover the cost of such resources, ambidextrously. This research contributes by developing a strategy of optimal resource hiring, management, and dynamic allocation through experimentation in an emerging product centric systems integration firm.

During such experimentation it is possible to test how in turbulent industries like

IT Services , knowledge gained from close interfaces with customers works as an important enabler to build services business. A firm with product based linkages is more likely to understand the fast changing customer preferences and demands and have better access to accurate and timely knowledge about the requirements of customers - thus the mechanism by which knowledge spillovers happen from product to service based offerings and how this helps in creating profitable services business can be demonstrated experimentally in some customer accounts. With increasing industry competition and turbulence it becomes increasingly important to create inimitable and valuable resources to ensure survival through differentiated competitive advantage. The question is, how does an emerging IT Systems Integration firm achieve that ? This research provides a direction on the strategic moves that lead to a high probability of success.

Fang, Palmatier and Steenkamp observe that " If the firm's service transition strategy fits with its product strategy, the effect is strong and increasingly positive, especially when service intensity surpasses a critical level of approximately 20%". "While the benefits of shifting from a product centric business to a service centric business are recommended consistently by academicians and practitioners, to improve firm performance in an era of increased product commoditization and global competition, little empirical research tests whether and in what conditions service transition strategies actually contribute to firm value. (Fang, Palmatier and Steenkamp). They argue that effect on firm value become pronounced only after the level of services sales reaches a critical mass which averages 20% to 30% of total firm sales . The negative effects of service transition strategies are strongest at low levels of service sales and diminish as the service ratio increases. Once the service ratio reaches a critical mass, the synergistic effect of offering products and services and the benefits of services become more dominant and hence the service ratio provides an accelerating positive effect on firm value." But these observations in extant literature are outcomes of results from sample surveys- such observations create an opportunity to choose a transition strategy, keeping in mind firm and industry conditions, identify strategies keeping critical success factors like service relatedness, resource optimization and allocation, sales capability, value creation knowhow in mind during an empirical exercise- such an exercise calls for investment in resources, consulting and services business related to a firm's core product strategy and installed base, brand building on specific services, and at the same time analysing how change in service ratio affects the accounting metrics of a firm over a period. Its also important to identify strategies which would enable increase in service ratio, leading to performance improvement in accounting metrics. Since accounting metrics has a direct relationship with firm valuation, such a strategic experiment can help us to provide directions to firms on how to enhance firm valuation. Management practitioners in mid sized IT Systems Integration firms do lack guidance on how to successfully create services and consulting business from a product centric base and this research aims to demonstrate the way forward for such practitioners. Such a journey involves significant risks and therefore the strategies deployed need to keep in mind constant risk mitigation, creating synergistic benefits of products and services,

protection of cashflow and profitability.

Also while secondary data provides insight into causality, supports firm and industry analysis, it does not enable us to investigate the mechanisms through which service transition affects firm performance. A direct empirical approach explores how moderators create an impact on firm performance. The selection of specific services, hiring strategies to quickly create value in the customer place through consulting services are expected to evolve by directly initiating such investments. Isolating certain performance variables like services sales, profitability, costs through which a positive effect occurs in a firm and analyzing how they affect accounting metrics is another important exercise that this research does.

Mehdi Nezami, Stefan Worm and Robert Palmatier have tested a comprehensive framework exploring effects of Sales Growth, Profitability and Cash flow volatility on firms' overall performance at several stages of service transition. They identify these three financial-based mediators linking service ratio to firm value. They find that "while providing services monotonously boosts sales growth, it has a U shaped curvilinear relationship with profitability and reduces cash flow volatility." While their findings are interesting (outcome of longitudinal data set of 525 manufacturers) and highlight that " increasing the scope of the service business by diversifying across different markets unfavourably moderates the effect of the transition to services on profitability" , its worthwhile to arrive at a strategy which can favourably moderate the effect of such a transition. The firm and industry covered by the scope of this research offers the opportunity to test if resource competency in certain domains can enable a firm to diversify across different markets successfully and enhance profitability. Especially in the IT Services industry one can try training resources adequately in certain domains and then utilise common resources across projects in different markets profitably. Therefore the need to identify services, where the value creation knowhow can enable offering consulting services to multiple customers simultaneously, thereby optimising costs significantly. While identifying solution strategies, this research tries to identify particular types of services, which lead to cost optimisation with more and more customer acquisition, even if it happens in diverse markets. The industry being IT Services creates an opportunity of doing so spontaneously if a firm creates competitive advantage by building a remote consulting services model around specific services.

Nezami, Worm and Palmatier also suggest that service ratio is a valuable metric that financial analysts can use to assess a firm's potential sales growth, profitability and cash flow- this creates a motivation for analysing the relationship between service ratio and key accounting metrics. This analysis may lead us to predict future gross margins of a firm, for example on the basis of service ratio trends.

Suarez, Cusumano and Kahl 2013 argue that inspite of significant investment in services, "many companies still fail to grasp the performance implications of adding services, suggesting that "both researchers and practitioners need to better understand how service and marketing efforts affect financial statements and market valuation". (Anderson 2006). Since previous studies focus on single performance metrics or ignore differential effects across the stages of service

transition,(Eggert, Thiesbrummel, and Deutscher 2015), the results that arise from prior research regarding effectiveness of service transition strategies may appear conflicting- Nezami, Worm and Palmatier "seek to improve understanding of the dynamic effects of B2B firms' service transition strategies on firm value, by decomposing the effects of three financial based mediating mechanisms while also accounting for difference across stages"- Sales growth, profitability and cashflow volatility. Their studies analyse survey data and offer rich managerial insights into the the pattern assumed by sales growth, profitability and cash flow volatility through three stages- exploration, learning and payoff. To understand the net effect of service transition strategies they highlight " the need of empirical research that can shed light on all financial outcomes in a single analytical framework (Eggert et al 2014). The financial outcomes, they argue may depend on the stage of service transition, and vary as a firm builds necessary capabilities and implements the required organizational changes. They make an important observation that " the effect of adding services is dynamic and unfolds as the firm progresses in its implementation of this service strategy".

The question is, how does a researcher/ practitioner get a view of the best practices and strategies around service transition, impact on a reasonably complete framework of financial outcomes and the stage wise dynamics of a transformation without running an experiment oneself? Survey and interview data offers insights on various industries and firms but unless a practitioner picks up a firm and actually invests in such a transition, the realization of the challenges

and the evolution of strategies appears to be incomplete. Also its important to analyze metrics that shed light on management efficiency, liquidity and solvency

- this research therefore not only rolls out service transition strategies in a mid-sized systems integration firm but also analyses the impact of change in service ratio on key accounting ratios, without restricting the study to sales, profitability and cashflow volatility.

While Mezami, Worm and Palmatier explore simultaneous effects across different mechanisms and the dynamic nature of service transition strategies for firms' overall performance by proposing and testing a comprehensive, integrated framework of the effects of B2B services on firm performance, and shed light on the pattern which sales growth, profitability and cashflow volatility follows with respect to service ratio, the tactics which firms should use to address the challenges of implementing service transition strategies remain largely unexplored. Such tactics are best understood when practitioners implement such strategies themselves and parallely engage in research . This research creates value by adopting a technique of strategy implementation and simultaneous analysis.

Tuli, Kohli and Bharadwaj (2007) "provide a formal definition of solutions as a set of relational processes that include, requirements definition, customization and integration, deployment and post deployment support.

While suppliers and extant literature view a solution as a customized and integrated combination of goods and services for meeting customer's business requirements, customers view it as a set of customer-supplier relational processes comprising, customer requirements definition, customization and integration of

goods and services, their deployment, post deployment customer support. The relational process view can help suppliers deliver more effective solutions at profitable prices." (Rethinking Customer Solutions- From Product Bundles to Relational Processes - Tuli Kohli and Bharadwaj). In essence they emphasize on the importance of process centricity in lieu of product centricity to generate higher returns . We take this opportunity to explore empirically a process centric approach in certain customer accounts by offering solutions which directly create a positive impact on customer's business goals . In the process, products may go as part of the solution resulting in enhanced revenues, cashflow and profitability. Following an approach around the components of relational processes, we measure the nature of returns in solution centric projects.

Certain variables have been identified in management literature which appear to be critical for achieving success in service centric business, as follows:-

Supplier variables – Contingent hierarchy, Documentation emphasis, Incentive externality, Customer interactorstability ,Process articulation.

Customer Variables- Adaptiveness to supplier offerings, Political counseling, Operational counseling.

(Rethinking Customer Solutions from Product Bundles to Relational Processes - Tuli, Kohli and Sundar Bharadwaj)

While implementing Contingent hierarchy in a firm which is transitioning from a product centric approach to a solutioning approach, positioning the firm in the Consulting space appears to be critical- interestingly, selection of the right solution domain and developing skills around that domain is necessary but not sufficient to ensure business development. It is here that variables like Contingent hierarchy, Documentation emphasis and incentive externality has a major role to play. This research deploys certain techniques like targeting a certain solution domain in select customer accounts and making a skilled presales technical consultant to lead the business development in those accounts. The credibility of the firm increases significantly when the conversation is conducted around solutions by a domain expert instead of a sales person pushing products. This results in customers realizing the value created by the firm , leading to a mindset of allowing reasonably high margins to the firm. Such presales consulting experts have an intrinsic tendency to generate documentation highlighting best practices and processes, thereby creating a Centre of excellence around a solution, benefiting the firm as well as the customer. Incentive externality creates a motivation for presales consulting, implementation and support teams along with sales to build sustainable , predictable solution businesses. To add to the benefits, the firm gets the opportunity to supply and install the products which are necessary for deploying the solution- this creates avenues for more revenues and margins. In this research, we test the outcomes in select customer accounts by changing the approach of business development- from product sales to consulting. Extant literature mentions the benefits of such an approach but we take specific customer situations and run an experiment to analyze the outcomes.

As per Wolfgang Ullage and Werner Reinartz (Hybrid offerings - How manufacturing firms combine goods and services successfully)

"Executives identify four critical resources:

1. Product usage and process data derived from the firm's installed base of physical goods,
2. Product development and manufacturing assets,
3. An experienced product sales force and distribution network,
4. A field service organization."

"In leveraging these specific resources, successful firms build five critical capabilities:

- Service-related data processing and interpretation capability,
- Execution risk assessment and mitigation capability,
- Design-to-service capability,
- Hybrid offering sales capability,
- Hybrid offering deployment capability."

The outcomes are differentiation and cost leadership. However despite emerging body of research, "we know little about what drives success or failure of an effort to increase the service component" (Bolton, Grewal and Levy 2007). Managers do agree about movement into services but anecdotal evidence indicates mixed outcomes at best, Ulaga and Reinartz argue and contend that this evidence exemplifies poor understanding of hybrid offerings compared with pure goods and pure service offerings. They investigate what distinctive capabilities must goods focused manufacturers develop to generate successful hybrid offerings, which unique resources must be leveraged to build these capabilities, and how does one create cost advantage or a differentiation advantage . Through interviews and data analysis , they arrive at the critical capabilities and critical resources- this leads us to link the case of an IT Systems Integrator to empirically validate and quantify the proposed effects through hybrid offerings. It appears worthwhile to test the resource and capabilities proposed in a customer account and understand the outcomes for the firm as well as the customer.

"Hybrid solutions have been defined in existing literature as , Products and services combined into innovative offerings can help companies to attract new customers and increase demand among existing ones by providing superiorvalue. However, most companies stumble in one or more of four ways – Failure to differentiate, Failure to scale, Failure to access markets and prices appropriately and failure to invest in the brand."

"Examining the products and services on complementarity and independence, the types of hybrid offerings that emerge are-

- Flexible Bundle
- Peace of mind bundle
- Multi benefit Bundle
- One stop Bundle"

It is therefore, critical to understand how to structure, market and sell combined offerings. To create successful hybrid offerings, selection of the most appropriate combination is very important. For IT systems integrators a flexible bundle appears rewarding as " this bundle is ideally suited to complex products and services that address serious customer problems." "The products and services themselves are independent but they are also highly complementary (their value can be significantly enhanced by combining them flexibly)".

Venkatesh Shankar, Leonard L. Berry and Thomas Dotzel mentioned Oracle on demand as an example. " Reputed globally for database software products Oracle also offers a consulting service for customization of the product allowing enterprises to get maximum value out of their Oracle investments." This research explores strategies to build a competency around Oracle technologies and analyses outcomes for the firm as well as the customer by deploying a flexible bundle around Oracle.

It is interesting to note that peace-of-mind bundle does not help IT systems integrators as this leads to a situation where the customers prefer products and services from the OEM. The Systems Integrators in this case do not get an opportunity to add value and become merely an execution channel, facing serious challenges owing to stringent commercial terms and shrinked margins. We test the outcomes of even peace-of-mind bundles experimentally to test the impact on revenue, cash flow and profitability.

Systems integrators may also decide to offer multi benefit or one stop bundle to the customer depending on the opportunity available for-profit maximization or creating free cash flow or just enhancing topline. We examine such situations and position multi benefit bundle and one stop bundle to select customers and explore how the firm can benefit from such initiatives.
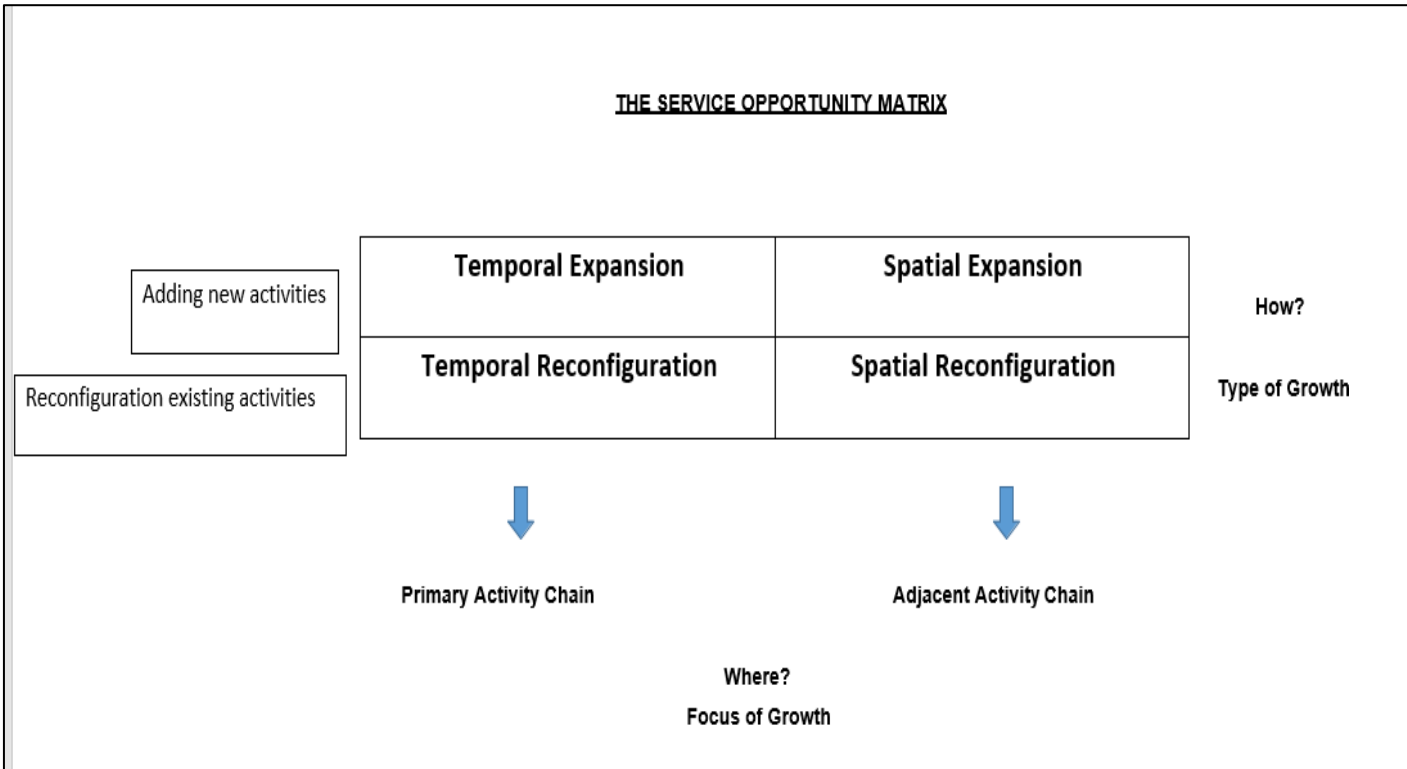
While identification of the potential solution offerings for the firm, we remember four rules suggested by Venkatesh Shankar, Leaonard L. Berry and Thomas Dotzel that is – "differentiation, scalability, pricing and branding." For example, while offering a globally renowned brand on software, it would be very important to build consulting services that are differentiated, scalable and priced appropriately to ensure a very high level of acceptance from customers. Identification of a globally renowned brand, the consulting services around the brand which would be differentiating in nature and would have a continuous demand in the market place is a critical success factor. Our research enables us exactly to identify such offerings, capable of building sustainable revenues for the firm.

While exploring the strategies for a value- creating transformation, we draw motivation from existing literature and carefully consider the following while identifying the right solutions, choosing the right customers and preparing a deployment plan of such solutions:-

1. "Companies faced with saturation of their core product markets, are increasingly turning to services. But the key to success involves redefining markets in terms of customer activities & outcomes, not products & services."

2. **"By mapping the customer activity chain and relating the activity chain to a service opportunity matrix, managers can systematically explore opportunities for new services in four directions." (please refer to figure 1)**

Figure 1 -

THE SERVICE OPPORTUNITY MATRIX

	Temporal Expansion	Spatial Expansion	How?
Adding new activities	Temporal Reconfiguration	Spatial Reconfiguration	Type of Growth
Reconfiguration existing activities			

Primary Activity Chain   Adjacent Activity Chain

Where?
Focus of Growth

"Identifying temporal expansion opportunities, managers should create a blueprint that maps the customer activity chain from one end to another and reveals the outcomes that customers seek."

"The search for temporal reconfiguration opportunities require managers to understand which capabilities are central to their business but peripheral to those of their customers." Thus mapping the firm's existing and potential competencies, with the customers' primary and adjacent requirements, we arrive at a product- services mix leading to much higher returns than that possible in a standard product centric business.

3. **At the same time managing associated risks and having a risk mitigation strategy is equally important, as Mahavir Sawhney, Sridhar Balasubhramanian and Vish V Krishnan point out. Hence, we make a very cautious move in the service transition strategy, keeping in mind the following risks and mitigation strategies.**

"MANAGING THE RISKS-

- **Capability Risk (Internal Perspective)**
- **Market Risk (Customer Perspective)**
- **Financial Risk (Business Model Perspective)**
RISK MITIGATION STRATEGY-
- **Organizational Strategy (Culture people org design)**
- **Design Strategy (Design and Architecture of the offering)**
- **Development Strategy (Related to the process of developing and testing new services)"**

(Creating Growth with Services - Mahabir Sawhney, Sridhar Balasubhramanian, Vish V Krishnan)

4. "Substantial service revenue can be granted from an installed base of products with a long life cycle (Rnecht et al – 1992, Potts – 1988). Services in general have a higher margin than products (Anderson et al 1977, The economist 2000, VDMA 1998) and services provide a more stable source of revenue as they are resistant to the economic cycles that drive investment and equipment purchases. Increasing technological complexity and narrower definitions of core competencies lead to rise of service outsourcing (Lojo 1997). Services, being less visible and more labor dependent are much more difficult to imitate, thus becoming a sustainable source of competitive advantage"(Heskett et al 1997).

5. Hurdles to Service Transition –" Firms not realizing the economic potential. Firms having a perception that providing services is beyond the scope of theircompetencies. Firms failure to deploy a successful service strategy. Hence, service transition needs organizational principles, structures and process which are new to a product centric firm. There is a need to add capabilities, metrics and incentives as well as change of business model to relationship from transaction." Qualitative data analysis field study is available on how a service transition involves a deliberate development process to build capabilities as firms shift from product centricity, but there is a clear unaddressed need to conduct an experiment to clearly test how service integration can be carried out, the challenges that emerge during such a transition. Existing literature provides theoretical frameworks but does not test theabove.

(Managing the transition from Products to services – Rogelio Oliva and Robert Kallenburg)

6. "Literature elaborates on how transition from product to service can be initiated through customer value socialization and customer value management. The transition requires a shared understanding of customer requirements and the difference between a SDL paradigm and GDL paradigm."

(The role of competence in initiating the transition from product to service – Margareta Bjurklo, Bo Edvardssn, Heiko Gebaner)

7. "One cannot develop a common strategy for completely unrelated activities."

8. "Most research on transition from products to services in industrial markets is still limited to exploratory research based or case studies or in-depth interviews. Empirical research in IT systems integration space appears to be missing."

9. "Service based value creation needs development of appropriate service offerings along two key dimensions – Business Integration and Technical Application Integration."

(The transition from Product to service in business markets – An agenda for academic inquiry – Frank Jacob and Wolfgang Ulaga.)

Movement up the Value Chain :- As per Anandasivam Gopal, Sabari Rajan Karmegam, Balaji R. Koka and William M. Rand "information technology service providers are often advised to consider moving their service offerings along the

value chain as a way to enhance their competitiveness. Service providers operating successfully at the lower end of the value chain have tried to expand into higher order consulting services whereas those operating higher up on the value chain have sought to expand into more routinised services."

They observed that such movement along the value chain have met with limited success. Their findings suggest that" firms moving up the value chains are likely to be successful only if such moves are accompanied by significant resource changes, while firms moving down the value chain are likely to be successful if only such moves are accompanied by learning capability." (Is the Grass Greener? On the Strategic Implications of moving along the value chain for IT service providers by per Anandasivam Gopal, Sabari Rajan Karmegam, Balaji R. Koka and William M. Rand).

"Moving up the value chain in the context of IT service providers refers to service offerings that are complex, knowledge based, of higher value and more transformational (Linder 2004, Li et Al. 2008). Firms can also choose to shift down the value chain (Christensen et al. 2013). For instance, McKinsey & Company, a Strategy consulting firm, sought to leverage its strengths at the strategic end of consulting engagements into more routinised data-oriented analytics projects using a subscription or license – fee- based model (Christensen et al. 2013). Such strategic moves enable a firm to acquire and build on existing capabilities in new and positive ways (Su 2013). However, such moves carry huge risks as is evidenced from the experience of Infosys technologies who founded Infosys Consulting – A US based subsidiary to focus on higher margin and higher value consulting projects" (Garud et al. 2006, Babu 2009, Burgelman and Schifrin 2011). "The new consulting entity however never achieved traction and was eventually shutdown (Babu 2009, Sen 2014)". Thus, identification of specific strategic actions is critical to increase the probability of success while moving along the value chain. As per existing strategic management literature movement along the value chain lead to deviations in the firm's core strategy enhancing the chances of adverse implications as such a change in strategy may lead to internal inconsistencies between resource, processes and actions. We observe a contradiction here between the theoretical arguments from strategy literature and the advice from IT practitioners and researchers to IT services firms on moving up or down the value chain (Anandasivam Gopal et al 2020). The absence of systematic work to resolve this contradiction leads us to believe that there is a paucity of research addressing the outcomes associated with moves along the value chain (Anandasivam Gopal et al).

"Extant literature identifies the role of three key resources and capabilities - Change in internal resource mix. Role of learning capabilities (Ethiraj et al. 2005, Bapna et al. 2013). Role of general purpose technologies to increase productivity (Brynjolfsson and Mitchell 201`7, Roos and Shroff 2017). Resources and Capabilities lead to increased resource fungibility."

"Strategy literature identifies firms with three distinct strategy orientation (low cost leaders-LCs, differentiators-DFs and hybrids-Porter 1980, Dess and Davis 1984. Pathways have been identified within the IT services literature enabling firms to

transition along the value chain - Transition within and existing client relationship where higher level work is offered to the service provider (Levina and Ross, 2003). Adopting an internationalization strategy (Su 2013). Acquiring third party firms already operating higher in the value chain (Niosi and Tschang,2009). Transition organically by building resources" (Chellappa and Saraf, 2010; Lee et al. 2014).

Literature also has identified challenges in moving along the value chain as follows-

"Strategy literature has long recognized that firms consistent in their strategic orientation (choice of technologies, resources, processes and markets) will perform better because this fit between all activities is essential to achieve competitive advantage." (Miles and Snow, 1996 and Porter 1996).

"However consistency and fit between resources, processes and action can also hinder the movement along the value chain because of conflict and contradiction with the firm's strategic orientation. Any movement across the value chain will involve reconfiguring the existing resource mix either by acquiring resources or by training them." (Normann and Ramirez 1993 and Bapna et al. 2013).

"Across levels of the IT services market, there exist significant competition (Ruchman et al. 2015) and hence using the existing resource mix may lead to resource inefficiency and high opportunity cost. As clients choose to engage multiple providers for their diverse IT services. (Levina and Su, 2008 and Bapna et al, 2010), firm's moving along the value chain face significant obstacles from competitors."

There are examples of Hexaware technologies in India, moving up the value chain with ERP Consulting practice into an offshore development centre, BCG Consulting moving down the value chain from high-end management consulting to analytics services, HCL Technologies moving up the value chain through SAP Consulting services, IBM trying to move down the value chain through application development and maintenance, but the evidence on success and failure of such moves are anecdotal and inconclusive .

"Little prior research has addressed the performance implications of firms that deviate from pure strategy orientations , indicating the need to better understand when such deviations may be successful . There has been little empirical research on the effects of movement along the value chain in the academic literature . There has been little emphasis on identifying the factors important for success of these moves forcing practitioners to identify some factors, as per Anandasivam Gopal, Sabari Ranjan Karmegam , Balaji R Koka and William Rand 2020. There is no consistent evidence that either moving up or down the value chain is associated with improvements in firm performance."

Thus extant literature creates an opportunity to identify specific strategies in order to successfully move a firm up the value chain. Strategies will vary depending on the orientation of the firm ie Low-Cost or Differentiator or Hybrid and factors like significant enhancement of resources, learning capability, resource fungibility have been identified as critical to success. "However existing literature is based on theoretical driven models of firm behavior and require focused empirical testing to validate the propositions-

there is paucity of research done in understanding how moves along the value chain or movement along adjacent markets may lead to success using empirical data from the field" (Abbott et al 2012). " This can be done through detailed case study of a firm going through a service transition and a quantitative approach at a firm level can be undertaken across years to understand how expansions in product or service lines may lead to success." (Ruckman et al 2015). This research conducts an experiment with a hybrid firm to identify the strategies that are expected to be effective while moving up the value chain- in the process it provides a view on how to select services that would perform under any circumstances, how to optimize resource and learning costs as well as how to protect cashflow and profitability during such a journey.

Keun Lee, Tae Young Park and Rishikesha.T. Krishnan observe that Indian IT Service firms are successfully competing with world leaders and research on the industry is emerging. They identify the windows of opportunity open to Indian firms, with the following findings-

1. "The catching up process by Indian IT firms through Body shopping-Offshoring- global delivery model comparable to Original Equipment - Own design-Own brand manufacturing.

2. Window of opportunity for Indian firms was primarily the techno economic paradigm shift and the Government's regulation and support for the industry

3. Indian firms initially partially reinvented their own path by offshoring and created their own global delivery model, gradually moving to higher value added services. "

(Catching up or leap frogging in the Indian IT Service Sector : Windows of opportunity, path creating and moving up the value chain - By Keun Lee, Tae Young Park and Rishikesha. T. Krishnan). In this article the authors explain how leading Indian IT Services firms like TCS, Infosys and Wipro achieved leapfrogging through business strategy and planning, building competencies and developing business with global customers as well as global leaders in IT Services. As per the authors " IT Service seeks to increase a firm's value by providing consultancy, implementation and operation of its information system" and mention " Consulting and planning form the top end of the IT Service value chain followed by systems integration, application design, development and maintenance, and finally coding which constitutes the bottom of the value chain". They provide a clear definition of Consulting and Planning as a process that delivers business, strategy, technical and solution consulting related to IT Service and a definition of Systems Integration as a process that integrates the information system as a whole using hardware, software, network, solution and other equipment.

It is observed that large Indian IT Service firms like TCS, Infosys and Wipro have transformed from local low value-added companies to global high value -added players. This has led to deployment of competent resources globally by such firms- in the domestic market (Indian market to be specific), such firms require a cost effective business model to deliver integrated solutions to customers. A number of customers expect firms like TCS, Infosys, Wipro, HCL Technologies and even

multinational firms like IBM and the Big Fours to offer consulting- applications based solutions- infrastructure - platform under one umbrella. This creates opportunities for midsized systems integrators to offer products, infrastructure consulting services , software platform related services, application deployment, software and hardware support services to such large firms leading to transformation in the midsized systems integrator firm. For firms like TCS, Wipro, IBM , HCL technologies it may make sense to pick up turnkey projects in the domestic market and subcontract products and services to midsized firms at cost effective rates instead of trying to execute all the elements of a project on their own incurring huge resource costs.

Also while engaging midsized Systems Integrators , significant risk transfer can be done by such large firms, justifying the Risk- Return and viability of projects. Even Big Four firms who have huge competencies in consulting services and application based solutions, in order to increase market share in the domestic market, need to compete in opportunities where as a lead bidder they need to own the entire scope of work including infrastructure services, Platform services and software services. For large consulting firms like Big Fours, it may not make sense to open up costly verticals or practices in all areas of IT Services- therefore they do consider engaging emerging Systems integrators to participate as consortium partners/ subcontractors/ service providers/ integrators, at optimum costs. In this particular experiment, we analyse the outcomes when a midsized IT Systems Integrator invests in projects either as a consortium partner or subcontractor to large firms like TCS, PWC, IBM - the rewards and challenges in such a journey and how it adds value to the firm's growth and profitability.

Please refer to the below figures -

Classification of IT Services

FKII	IDC	NASSCOM
· IT consulting · System Integration · System Maintenance (i.e. outsourcing) · Others (Embedded software outsourcing, IT training, etc.)	· Planning & Consulting · Implementation · Maintenance & Support · Operations · IT Training & Education	· IT consulting · System Integration · Custom application development · Application management · Software testing · Network consulting & integration · Support & Training · IT outsourcing · Others

Sources: Tabulations based on FKII (2008) and Mizuho Corporate Bank (2008).

Three Catch-up Stages:

Indian IT Service Industry	
Catch-up stages	**Characteristics**
Late 1960s–1970s Body shopping	· Dispatching the manpower of Indian firms to clients · As subcontractors of multinational IT firms · Performed simple jobs like coding · Depended on multinational firms for marketing, sales (branding/brand management), and human resources management

1980s–mid-1990s **Offshore**	· **Indian firms managed and controlled their human resources** · **Prime subcontractors of multinational IT firms** · **Extended their services to ADM and developed their own S/W** · **Depended on multinational firms for marketing, and sales (branding/brand management)**
Mid-1990s–Present GDM	· **Combined onsite, offshore, and nearshore at the appropriate ratio** · **Highest degree of independent management** · **Delivered a full range of IT services**

Sources: Stages in manufacturing are based on Hobday (2003); other information by the authors.

Key takeaways from the Literature Review –

- Performance impact of solutions at the customer account level.

- Over and above value creation knowhow and sales capability, investigation of a broader set of firm capabilities required for solutions, such as organisational structure, technology investments, operation skills.

- Deployment of value creation knowhow and sales capability in launching specific services through an experiment in a firm.

- If service transition results in mixed outcomes then how does one select specific strategies to significantly increase the probability of success? Thus it appears reasonable to conduct an experiment with specific service lines of business.

- A field randomized control design experiment will address the issue of causality that prior research only addresses through econometric methods

- Extant literature recommends a shift from product centric to process centric thinking, from transactions to relationships. Thus a solution is an ongoing, relational process of defining, meeting and supporting customer's evolving needs.

- Scalability is mentioned as an important factor if solutions have to be successful. Defining future needs is important as customers' needs evolve overtime.

- Literature also leads us to believe that unless suppliers view solutions as relational processes and pay attention to the supplier as well as customer variables, profitability erosions, loss of business opportunities and customer dissatisfaction may occur.

- Extant literature emphasizes on Differentiation, scaling the product and scoping the service, assessment of profit, revenue and cashflow potential of various hybrids and investment in the brand. Hybrid offerings as per literature attract new customers and improve demand among existing ones by providing superior value. Firms are enabled to boost revenue, profit streams and improve liquidity at low risk.

Capability Risk –

- Will expansion into service areas take a company outside the logical scope of its capability and organizational culture?

- An org strategy for managing risks is to inculcate new services businesses separately until they mature and can be rolled into parent organization

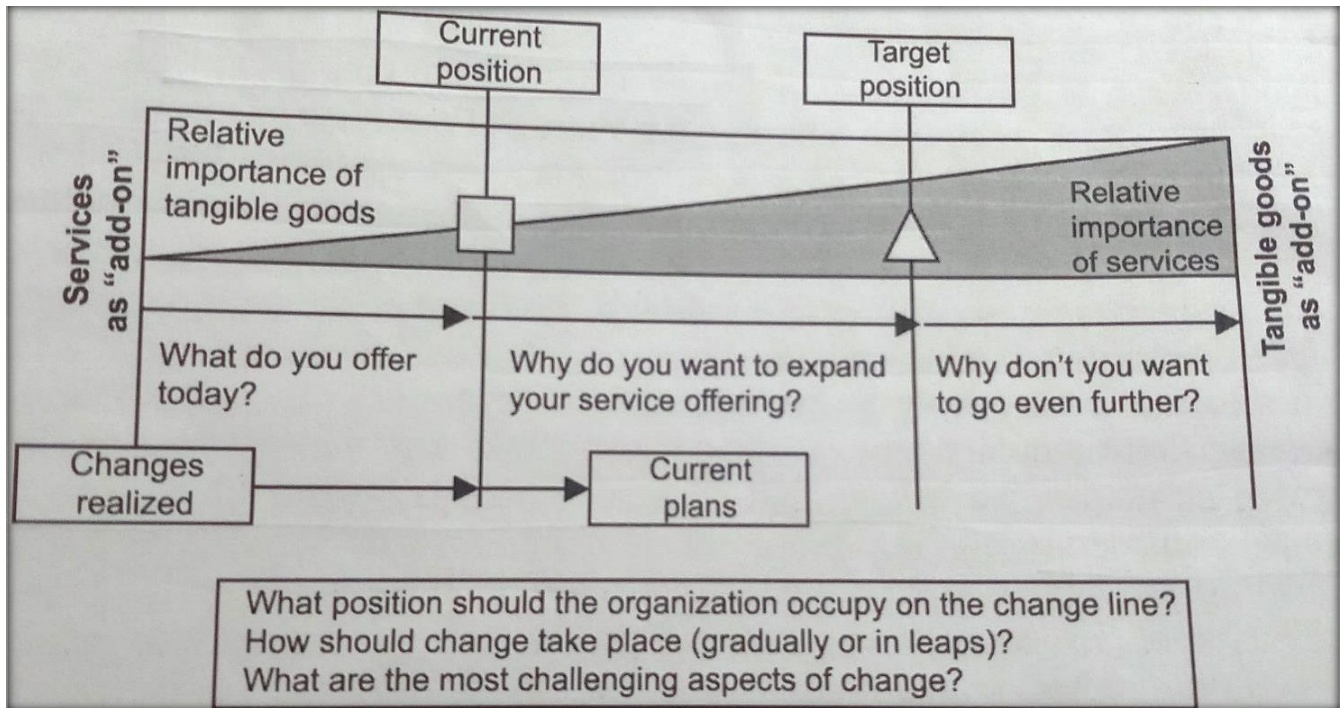- Also, leveraging partners' capabilities can help in mitigating capability risk.

Market Risk –

- Customers may not adopt the service or reaching critical mass may take too long, creating funding problems.
- A separate organization dedicated to selling services is useful, as selling services can be more challenging than selling a product because the functional benefits associated are not as clear as products.
- Selling strategies may include basing sales pitch on successful well documented adaption stories, clarifying ROI, expected savings, revenue enhancements, process quality and product quality improvements and carefully managing customer expectations.

Financial Risks-

- Service growth opportunities may offer attractive revenues but not profits.
- Productized service is much more sealable than consulting business and is well sealed for smaller clients.
- Its incorrect to evaluate the economic case for services independently of the company's other offerings. Managers must compare the net present value of the firm with projected net present value once services are added.
- While existing products may offer high margins and appear more attractive than services, managers must consider whether increased competition and commoditization will reduce the attractiveness in the near future.
- While initial costs of service development and launch may be high, such costs can be reduced significantly as practice areas and tools are created which one replicable and reversible.
- In difficult economic times, companies often find themselves stumped as they look for growth in core business. They are intimated by the high rate of failure of services led growth initiatives.
- But systematically utilising frameworks for exploring opportunities and managing risks in services led growth should lead to success.
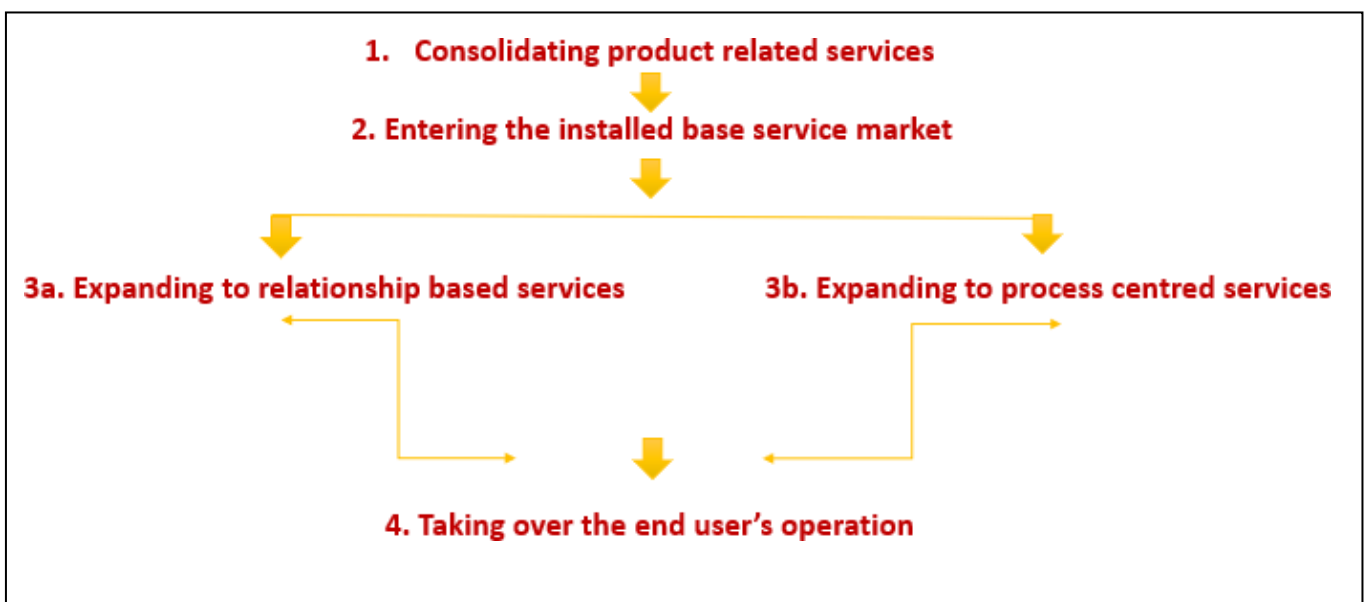
The product service continuum

Relative importance of tangible goods / Relative importance of services

Current position — Target position

What do you offer today? — Why do you want to expand your service offering? — Why don't you want to go even further?

Changes realized → Current plans

What position should the organization occupy on the change line?
How should change take place (gradually or in leaps)?
What are the most challenging aspects of change?

- **The Installed base market-**

"Service suppliers are not restricted to product manufacturers – Component manufacturers, maintenance units, third parties, like independent service providers and systems integrators compete in this market".

Process model for developing installed base services –

	Goods – Dominant Logic	Service – Dominant Logic
Offerings	Products and Service (P&S)	Value Prepositions
Resources	Operand resources are paramount	Operant resources are paramount
Value	Firms create value, Value embedded in P&S, Value in exchange	Value is co-created with customer, Value in use
Marketing	Marketing to Customer	Marketing with Customer
Customer	Exogenous, Use P&S which render value	Endogenous, Co-creates service renders value

Important differences between goods-dominant logic and service-dominant logic

1. Consolidating product related services
2. Entering the installed base service market

3a. Expanding to relationship based services — 3b. Expanding to process centred services

4. Taking over the end user's operation

- ➢ **Why transition from products to service?-**
- • **Decreasing profitability.**
- • **Increased customer demand for services**
- • **Opportunities to utilise competence for business development**
- ➢ **What is service and customer focus all about – Understanding of value creation , How value is co-created with customers?**
- ➢ **Identification of key competencies to create value for the customers – Not only strategy and structure.**
- • **"Economics of services business are different from the economics of product business, making it difficult for a sales org to focus on small service offerings".**
- • **"In manufacturing org or product centric firms , services are often thought of as add-ons and initial services are "given away" to sell the product".**
- • **"At the core of a cultural transformation there is a need to learn to value services and how to sell, deliver and bill services".**
- • **"A critical success factor may be creating a separate service organisation with profit and loss accountability. Establishing themselves firmly in the basic installed base service enables companies to move to the next stage".**
- • **"Service offerings beyond transaction and product oriented business require development and capabilities in two directions – Relationship contracts or process oriented extracts".**
- • **"Products and Services sales people ranked most of the selling techniques similarly. But the two groups judged the importance of a particular technique to be significantly different for more than a quarter of 84 techniques".**
- • **"Industrial sales people selling products employ techniques that use tangible aspects of the product more than services salespeople. Services sales people emphasise on techniques that utilise personal assistance of customers. Service salespeople address directly the single obstacle to buying, summarize the benefits and appeal to the prospects emotions".**
- • **"Marketing a product can involve different selling techniques than marketing a service. Intangibility of a service is a key factor here. Non-product related selling techniques are used by services sales people".**

(Selling techniques for Industrial Products & Services – Are they different? – By Alan J Dubinsky and William Redelius.)

- • **"Cost implications are driven *by* availability and costs related to acquiring capable and skilled resources in the marketplace . (Aron et al 2008, Langer et al 2008 , Bapna et al 2013) as well as the ability to deploy existing resources in projects different from existing projects".**
- • **"Revenues on the other hand are influenced by the complexity of the projects- higher the complexity higher the prices, all else being equal. (Carmel and Tjla 2005, Abbott et al 2012, Su 2013)".**
- • **"One possible strategy to move into adjacent markets on the value chain without incurring excessive costs is to retain the same resources and shift only the nature of the firm's demand side- alternatively it is arguable that a successful move along the value chain requires a new resource mix consistent with the new customer profile facing the firm. (Weick 1979, Abbott**

et al 2012)".

- "It is not easy to access highly productive resources in emerging IT service areas like big data and cloud computing. (Tambe 2014, Loebbecke and Picot 2015)".

- "IT Services firms are likely to be successful in moving up the value chain only if such moves are accompanied by significant changes in the resources within the firm".

- "IT Service firms are likely to be successful in moving down the value chain only if such moves are accompanied by the development of a significant learning capability".

Implications for this research study –

- The selection of these services is obviously extremely critical. In this case it is proposed to roll out services which are directly related to the core system integration business of the firm.

- While conducting this experiment, it is worth while to test the level at which the firm can grow significantly in revenues and profitability, i.e. the percentage of services business to total revenue which creates this change.

- Through this experiment unique characteristics of sales approaches or distinctive capabilities required for mastering hybrid offerings sales, can be identified.

- This experiment with specific services may enable us to arrive at a reasonably accurate and acceptable model for the IT services industry

- If an experiment is run applying the correct strategies, can we take advantage of service relatedness and industry turbulence to improve a firm's financial performance and accounting metrics even in the short run?

- The literature links the impact of service ratio to firm value but does not isolate performance variables like sales, costs, cashflow and profits through which its effect occurs. Our experiment should attempt to identify and isolate the relative importance of such mediating performance variables.

- Since literature focusses on theory construction, rather than theory testing there is ample scope to test empirically some of the theoretical propositions.

The following questions also arise as an outcome of literature review :-

- How does customer interactor stability enable retention of revenues, growth and profitability from key strategic accounts? If that is not maintained, does it lead to inconsistency and unpredictable outcomes in business growth and returns?

- How does adaptiveness to supplier offerings impact solution effectiveness?

- How does political and operational counseling impact solution effectiveness?

- How does process centricity in a service transition journey influence customer perception, revenue and profitability?

It is worthwhile to specifically test the outcomes in a customer account by shifting one's approach from product to process centricity. Can we implement an ongoing relational process of defining, meeting and supporting customer's evolving needs

in the customer account and measure the outcomes?

- It appears relevant to examine a fifth factor (over and above the four mentioned by tuli, kohli and bharadwaj)- Customers look at solutions today as optimization tools to achieve enhanced business efficiency tomorrow at a minimised cost.

- Tuli, Kohli and Bharadwaj raise a fundamental pertinent question – which solution creates more values for the customers; solution from single supplier or multiple suppliers. Interestingly, it is here that the IT systems integrators can create value if they can transform themselves to solutioning and consulting orgs by acquiring capabilities of integration of hardware, software and services to offer maximum value to the customer.

- Tuli, Kohli and Bharadwaj mention selling solutions as a complex exercise involving the consideration of conflicting requirements of multiple stake holders in a customer organisation and sales cycles lasting upto two years. (Dhar, Menon and Maach, 2004). The issues arising in a long cycle selling can be studied and strategies to address them can be identified through research.

- The value creation of a flexible bundle can be evaluated empirically by offering a hybrid solution on Oracle, as mentioned by authors.

- For systems Integrators it needs to be tested whether Peace of Mind bundle creates profitability for the SI or OEM ?

- Literature suggests one stop bundle for clients with low revenue potential – this may not be the real life picture. Its worth testing if one stop bundle deliver revenue, profitability and cashflow even from customer with high revenue potential.

The following research questions can be tested -

- Can services be added that precede the sale of the core product?
- Can services be added that follow the sale of the core product?
- Can services be added to accompany the sale of the core product ?
- Can the product be updated with service?
- Can Processes unrelated to customers' core competencies or strategic objectives be taken over?
- Can services change the way customer acquire products?
- The idea of starting by creating a new separate service org may not always work. It may create huge cost pressures.
- Creating a sales strategy for services growth and rolling out the same in key customer places can give us better insights on real life outcomes, positive and negative.
- Under financial risks, it can be explored under what situation, in a services initiatives, revenue grows but profit don't. Can we work out a solution to this problem?

It is also worthwhile to test the following points under Financial risk –

- Its incorrect to evaluate the economic case for services independently of the company's other offerings. Managers must compare the net present value of the firm with projected net present value once services are added.

- While existing products may offer high margins and appear more attractive than services, managers must consider whether increased competition and commoditization will reduce the attractiveness in the near future.

- While initial costs of service development and launch may be high, such costs can be reduced significantly as practice areas and tools are created which are replicable and reversible.

- In difficult economic times, companies often find themselves stumped as they look for growth in core business. They are intimated by the high rate of failure of services led growth initiatives.

- It is observed that studies did not explore the types of customers on whom product and services salespeople call. Its worthwhile to explore selling techniques applicable in different market segments like Govt, Private Enterprises, Banking and Finance, SMB and education for example. Therefore difference in selling techniques because of difference in customer type can be understood.

- Extant Literature leads to an interesting question which techniques can enable salespeople to succeed in products as well as services businesses in IT SI companies? For medium sized companies focusing on hybrid solutions/third party products with own service businesses, it may not be economically viable to have separate sales teams for products and services – neither it may be productive and efficient. The organisations have to build a sale capability to demonstrate value in the products as well as related services in solving complex customer problems to enhance bottomline and topline. Such techniques efficiency can be tested in real life customer situations .Also, does pre sales skills on products enable consulting services sales?

- Experimentally, there is a scope to address the unaddressed issues associated with the hurdles towards service transition, e.g. evaluation of the installed base potential and extent to which a firm should enter the service market.

- There is a need to manage organisational attributes effectively to arrive at decisions regarding the extent to which a firm should move along the product service continuum.

- There is a need to practically demonstrate a deliberate, systematic and well structured transformation effort and keep measuring outcomes.

- Research empirically should establish the interdependencies between competency, strategy and org. structure on one hand and business performance (Growth, Profitability, Customer Loyalty) on the other.

- For B2B companies, transformation may mean that they enter into service markets but do not give up the product business. So its important to investigate the ideal portfolio configuration in terms of products and services.

- An important managerial concern – How to organise and manage a service sales force in addition to a traditional product sales force? Can we create an org structure by utilising, reskilling traditional product sales force and add

technical consultants instead?

- The insights, gaps and takeaways from literature on moving along the value chain creates room for empirical research on a hybrid firm .
- This research would test how deployment of resource mix , learning capability and resource fungibility contributes to outcomes achieved during the journey along the value chain , by a mid sized IT Services firm.
- Since the firm under discussion is hybrid in nature, it is interesting to test how it adopts elements of a Low Cost leader and a Differentiator flexibly to carve out a market space for itself.
- Literature Review suggests a quantitative approach at the firm level across a few years to understand how expansions in product or service lines may lead to success. (Ruckman et al 2015). Anandasivam Gopal, Sabari Karmegam, Balaji Koka and William Rand (2020) suggest that considerable research remains to be conducted in understanding how moves along the value chain may lead to success using empirical data from the field. In that light, this research should have significant contributions in addressing the issues mentioned in literature.

Findings from Industry Literature –

Industry literature is reviewed to understand changing customer preferences and arrive at types of solutions which would lead to improvement in firm performance . The following literature from Deloitte Insights and technology trends from E&Y provides a view on the same.

TECHNOLOGY BUDGETS: FROM VALUE PRESERVATION TO VALUE CREATION (DELOITTE INSIGHTS) -

1. "How can CIOs effectively utilize technology budgets to drive value creation?"
2. "TECHNOLOGY investments represent a growing percentage of corporate spending, and many organization stakeholders expect investments to be aligned with business strategy."
3. "In addition to the traditional industry benchmarks, investment strategy increasingly depends on existing technology capabilities, business strategy, and the competitive environment."
4. "As CIOs' mandates change from value preservation to value creation, optimizing IT investments has become a top priority for them—and their stakeholders."

SHIFTING BUDGET ALLOCATIONS -

1. "In their quest to make the best use of IT budgets in support of business strategy, CIOs need to rethink budget allocations across all categories. Today, adopting cloud and embracing Agile and DevOps is not a choice—it's a requirement."
2. "This demands a fundamental shift in the IT operating model and cost structures and entails looking beyond the traditional distinction between operational and capital expenses to track and report investments across business operations, incremental business change, and business

innovation."

3. "Streamlining business operations can free up budget dollars for investment in change and innovation initiatives, enabling CIOs to impact top-line growth."

TRENDS AND OPPORTUNITIES FOR IT SERVICES VENDORS -

Moving up the value chain

Increased investment in intellectual property (IP)

Cloud causing a shift in the pricing models

Focus on going bimodal

New opportunities for IT services companies

01	Integrated services such as IMS with Analytics
02	SaaS applications: Horizontal adoption
03	Mobility Applications
04	Enterprise risk and security services
05	Pay-per-use cloud infrastructure

Key challenges

1. Stiff competition

2. Lack of differentiation

3. Adoption of rapidly changing technology

4. Reducing margins

Internal process efficiency and agility, enhanced customer experience and innovation to drive competitive advantage are the key business drivers for adoption of latest technology

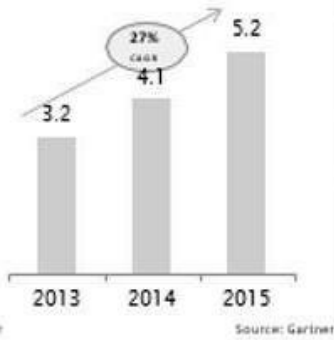| Cloud | Mobility | Analytics | Cybersecurity | IoT | Data center |

Data center services market in India is has reached around USD 2Bn in 2015 grown at a CAGR of 5.4%
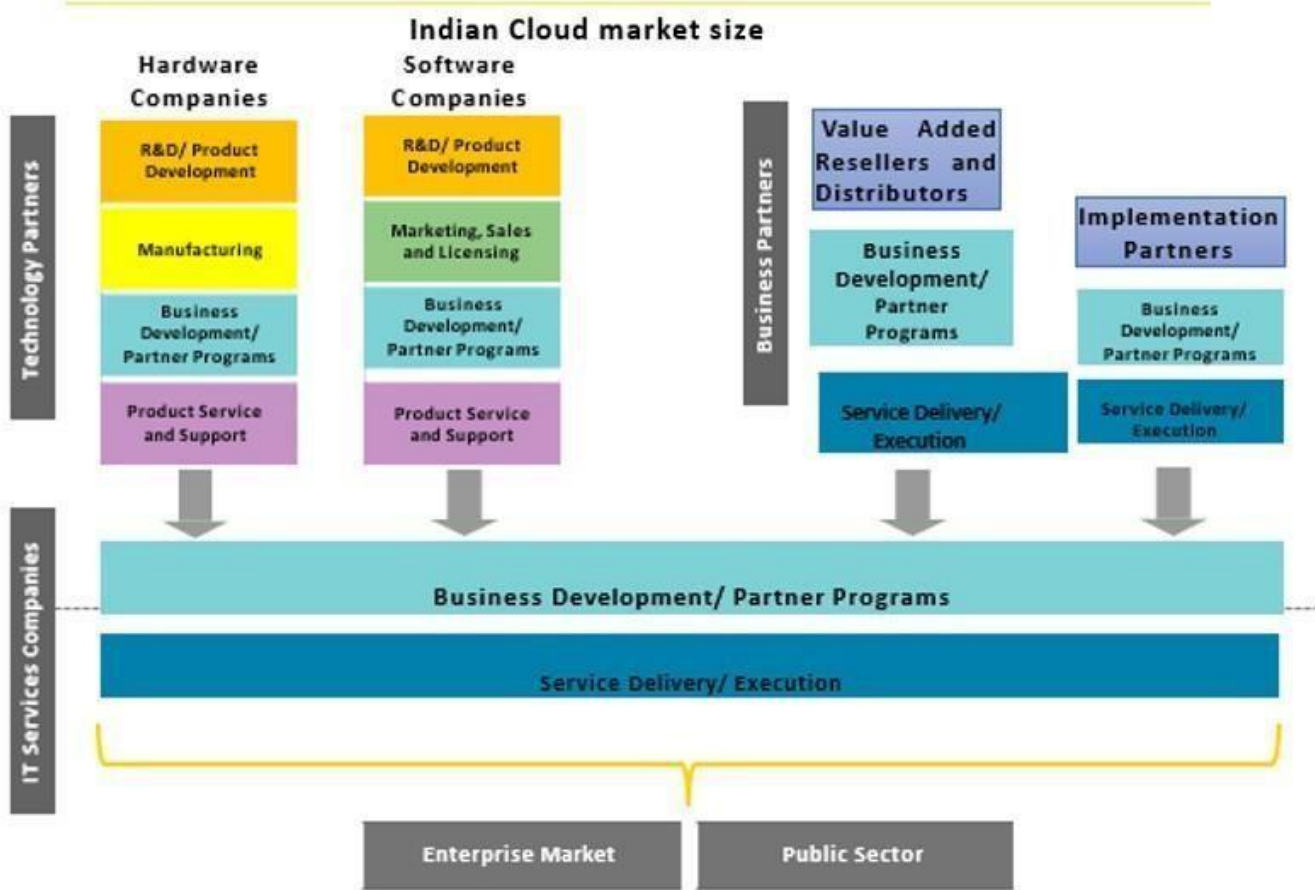
India data center market (USD Bn)

- 5.4% CAGR
- 1.82 (2013)
- 1.92 (2014)
- 2 (2015)

Source: Gartner
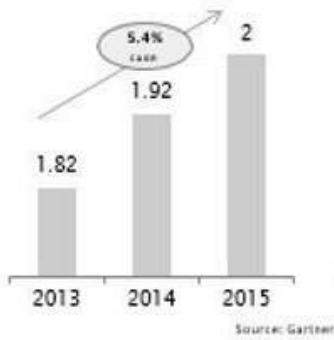
India data center space, sq. ft. (mn)

- 27% CAGR
- 3.2 (2013)
- 4.1 (2014)
- 5.2 (2015)

Source: Gartner

Robust growth for India DC services market

► Driven by the growth across verticals such as BFSI, IT, telecom and Gov., India is expected to become the second largest market for data centers in APAC

► Emerging verticals such as Media & E, e-commerce further driving the growth

► Network equipment is the largest segment of data centre market by (47% hare, around USD 948mn revenue in 2015) followed by servers (33 %& storage (20%)

► Customers' need for DC energy efficiency, continuity and agility to remain cost efficient is adding to the growth

By 2020, cloud would contribute over 17% of total IT spend

Indian Cloud market size

Technology Partners

Hardware Companies
- R&D/ Product Development
- Manufacturing
- Business Development/ Partner Programs
- Product Service and Support

Software Companies
- R&D/ Product Development
- Marketing, Sales and Licensing
- Business Development/ Partner Programs
- Product Service and Support

Business Partners

Value Added Resellers and Distributors
- Business Development/ Partner Programs
- Service Delivery/ Execution

Implementation Partners
- Business Development/ Partner Programs
- Service Delivery/ Execution

IT Services Companies
- Business Development/ Partner Programs
- Service Delivery/ Execution

Enterprise Market | Public Sector

With adoption of cloud technology rising, developing cloud strategy for client represents new opportunity for system integrators

From infrastructure selling to Consulting

- ► Select the right private or public cloud implementation for the customer needs by defining technology requirements, assessing risk, and specifying deployment requirements based on compliance requirements
- ► Evaluate and vet outside service for design, delivery, customization, pricing, privacy,
  integration, security and support
- ► Develop relationships with vetted cloud service provider
- ► Manage existing services, including service level agreements (SLAs) and service life cycle

Develop a vertical niche

- ► Understand the unique business problems, know the market niche, and speak the
  industry language
- ► Typically, big data solution providers focus on one of three areas: enterprise infrastructure, software development, or analytics. Having vertical capabilities in each of the three areas is the need of the hour
- ► This is going to mean breaking up the project into discrete deliverables and assigning responsibility for each component
- ► Since the business problem or use case is the fulcrum for any big data project, understanding the industry behind the problem is a big advantage

LITERATURE REVIEW		INDUSTRY CONTEXT
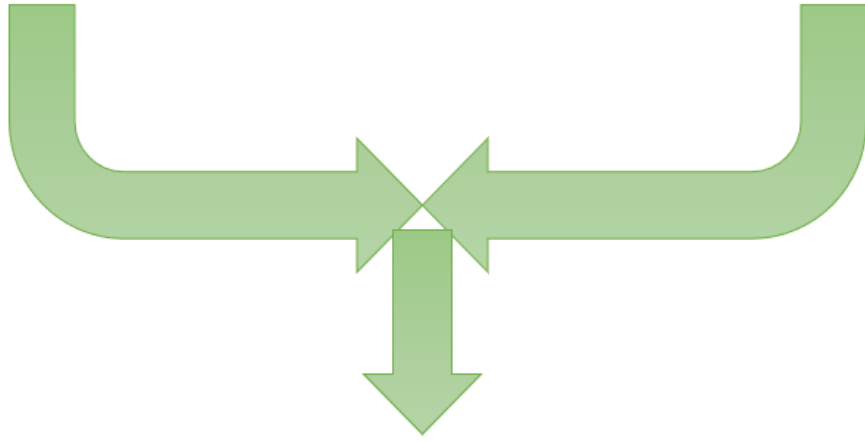
POINTS IN THE DIRECTION OF EFFECTIVE SOLUTIONS STRATEGY

<u>CENTRAL HYPOTHESIS –</u>

IT systems integration companies can overcome growth, profitability and cashflow challenges through transformation from infrastructure to services and consulting business. A solution strategy is likely to enhance firm performance.

<u>WHY QUALITATIVE RESEARCH IN THIS CASE?</u>

The research topic in general and the two themes - (Change in Customer needs and Disruptive Innovation) in particular needs exploratory research,

- To establish that there is a constant change in customer needs in today's IT services industry and understand the implications of this change affecting a IT systems Integrator who had been focusing on goods' business.
- To establish that disruptive innovation has influenced the industry landscape significantly.
- How the above play a key role in creating challenges for existing Systems Integrators with focus on goods.
- What should be the strategies to transform the business to enable the organisation handle the impact of disruptive innovation successfully.
- Qualitative research is essential to provide deep insights into the problem, using interviews and consultants' reports. In this case, the problem is of a unique nature and we are not looking at a mere generalizable and statistical solution.
- Qualitative research, in this case, enables us to gain valuable insight into our target audience's needs, preferences and motivations.

<u>Ref –</u>

(**http://www.askattest.com/blog/insight/** quantitative vs qualitative research and how to use each).

Detailed review of Industry Literature reveals the following : -

[Core Technologies](#)

With a spiraling volume of data, the need for better storage, server and database solutions is being increasingly felt by the customers.

The digital universe is doubling in size every two years, reaching 44 trillion gigabytes by 2020, according to one study. YouTube users upload 48 hours of new video every minute.4 In 2020—just five years away—data production will be 44 times greater than in 2009, notes other research. The torrent of data is putting a strain on IT infrastructure. Fully 55 percent of respondents report a slowdown in the performance of their IT systems and 47 percent cite data security problems, according to a global survey from Avanade, the Accenture-Microsoft joint venture.

To manage the business complexities, organizations are looking to implement converged infrastructure which would be an intelligent platform that improves infrastructure performance, storage capacity, and the ability to process more data. 88 percent of enterprises already have or are planning to implement a converged infrastructure, according to Forrester Consulting.

Accenture consulting believes there is a big room for Engineered systems to play an effective role in the movement of data. This will necessitate seamless integration between the existing architecture and multiple third party systems. The skills for integration, data migration from legacy systems to more powerful platform architecture creates opportunities for IT service companies to train and deploy certified skills.

Acc to Deloitte, there are 9 technology trends that are disrupting the industry – blockchain, cognitive technologies, digital reality,VR, AR, IOT, and the 3 foundational forces of modernizing core legacy systems, transforming the business of technology, evolving cyber risk security strategies beyond security and privacy. The 3 foundational forces, according to Deloitte make it possible for organizations to harness innovation while maintaining operational integrity. Any pursuit of tomorrow's promise should start from the technical realities of today. Three formative macro forces have proven essential in the pursuit of digital transformation past, present, and future: modernizing core systems, guiding how (and if) existing assets can serve as a foundation for innovation and growth; elevating cyber and the broader risk domain from a compliance-based activity to an embedded, strategic function; and, in a world where the only constant is constant change, reengineering an organization's technology function to quickly and impactfully deliver against the promise of technologies emerging and existing.

Not to mention the need to retool workers and cross-pollinate between traditional information and operational technology (IT and OT) roles and skills. Of the nine macro forces, these three have consistently captured the most mindshare (and investment dollars) over the last decade, and with good reason. Today they are the pillars upon which many ambitions for the future are built. And we're far from done.

Simply put, the business of technology, cyber, and core modernization enable technology transformation. When we say we need to imagine tomorrow and get there from today, these three macro forces put in place the foundation needed to make it happen.

Gartner research shows that 2018 worldwide database management system (DBMS) revenue grew 18.4% to $46 billion. Cloud DBMS revenue accounts for 68% of that 18.4% growth — and Microsoft and Amazon Web Services (AWS) account for 75.5% of the total market growth. This trend reinforces that cloud service provider (CSP) infrastructures and the services that run on them are becoming the new data management platform.

Every CSP has their own database and the services revolving around lift and shift requires consulting skills on migration from the legacy systems to Cloud infrastructure. For a seamless transition to the cloud, the possession of database skills in the legacy and the target systems is important to reduce costs and bring efficiencies.

Acc to Gartner,

Ecosystems are forming around CSPs that both integrate services within a single CSP and provide early steps toward intercloud data management. This is in distinct contrast to the on-premises approach, where individual products often serve multiple roles but rarely offer their own built-in capabilities to support integration with adjacent products within the on-premises deployment environment. While there is some growth in on-premises systems, this growth is rarely from new on-premises deployments; it is generally due to price increases and forced upgrades undertaken to avoid risk.

"Ultimately what this shows is that the prominence of the CSP infrastructure, its native offerings, and the third-party offerings that run on them is assured," said Mr. Feinberg. "A recent Gartner cloud adoption survey showed that of those on the public cloud, 81% were using more than one CSP. The cloud ecosystem is expanding beyond the scope of a single CSP — to multiple CSPs — for most cloud consumers."

As per IDC, 2016, Cloud-computing adoption has been increasing rapidly, with cloud-specific spending expected to grow at more than six times the rate of general IT spending through 2020.

Gartner Forecasts Worldwide Public Cloud Revenue to Grow 17% in 2020

IaaS Secures Highest Growth in 2020 Due to Data Center Consolidation

The worldwide public cloud services market is forecast to grow 17% in 2020 to total $266.4 billion, up from $227.8 billion in 2019, according to Gartner, Inc.

"At this point, cloud adoption is mainstream," said Sid Nag, research vice president at Gartner. "The expectations of the outcomes associated with cloud investments therefore are also higher. Adoption of next-generation solutions are almost always 'cloud-enhanced' solutions, meaning they build on the strengths of a cloud platform to deliver digital business capabilities."

Consulting Skills

The IT service organization can focus on the process of selecting, buying, building and deploying database management systems, covering business and market dynamics within the constantly shifting DBMS market and focusing on the strategies and plans of a number of important market players, such as Oracle, Microsoft and IBM.

Cloud Services

Software as a service (SaaS) will remain the largest market segment, which is forecast to grow to $116 billion next year due to the scalability of subscription-based software (see Table 1). The second-largest market segment is cloud system infrastructure services, or infrastructure as a service (IaaS), which will reach $50 billion in 2020. IaaS is forecast to grow 24% year over year, which is the highest growth rate across all market segments. This growth is attributed to the demands of modern applications and workloads, which require infrastructure that traditional data centers cannot meet.

Table 1. Worldwide Public Cloud Service Revenue Forecast (Billions of U.S. Dollars)

	2018	2019	2020	2021	2022
Cloud Business Process Services (BPaaS)	41.7	43.7	46.9	50.2	53.8
Cloud Application Infrastructure Services (PaaS)	26.4	32.2	39.7	48.3	58.0
Cloud Application Services (SaaS)	85.7	99.5	116.0	133.0	151.1
Cloud Management and Security Services	10.5	12.0	13.8	15.7	17.6
Cloud System Infrastructure Services (IaaS)	32.4	40.3	50.0	61.3	74.1
Total Market	196.7	227.8	266.4	308.5	354.6

BPaaS = business process as a service; IaaS = infrastructure as a service; PaaS = platform as a service; SaaS = software as a service
Note: Totals may not add up due to rounding.

Source: Gartner (November 2019)

Various forms of cloud computing are among the top three areas where most global CIOs will increase their investment next year, according to Gartner. As organizations increase their reliance on cloud technologies, IT teams are rushing to embrace cloud-built applications and relocate existing digital assets. "Building, implementing and maturing cloud strategies will continue to be a top priority for years to come," said Mr. Nag.

"The cloud managed service landscape is becoming increasingly sophisticated and competitive. In fact, by 2022, up to 60% of organizations will use an external service provider's cloud managed service offering, which is double the percentage of organizations from 2018," said Mr. Nag. "Cloud-native capabilities, application services,

multicloud and hybrid cloud comprise a diverse cloud ecosystem that will be important differentiators for technology product managers.

Demand for strategic cloud service outcomes signals an organizational shift toward digital business outcomes."

Just taking legacy applications and moving them to the cloud—"lift-and-shift"—will not automatically yield the benefits that cloud infrastructure and systems can provide. In fact, in some cases, that approach can result in IT architectures that *are* more complex, cumbersome, and costly than before.

The full value of cloud comes from approaching these options not as one-off tactical decisions but as part of a holistic strategy to pursue digital transformation. Such a strategy is enabled by the standardization and automation of the IT environment through an open API model, adopting a modern security posture, working in an automated agile operating model, and leveraging new capabilities to drive innovative business solutions. While cloud is not a prerequisite for any of these features, it does act as a force multiplier. Companies that view cloud capabilities in this way can create a next-generation IT capable of enabling business growth and innovation in the rapidly evolving digital era.

Enterprises have been successful in adopting SaaS solutions mainly because SaaS addresses the constraints of IT security, user interface, intuitiveness etc. in a simple fashion: they replace the existing business applications and leave the development of new features to the SaaS provider. SaaS solutions have therefore become very popular for business functions such as marketing and sales, back office (HR), and communication and collaboration.

However, in most sectors, there are no mature SaaS solutions for core business functions such as billing for the utilities sector and core/online banking for financial services.

As a result, despite overall increased cloud investment, enterprise cloud adoption is maturing slowly. Many enterprises are stuck supporting both their inefficient traditional

data-center environments and inadequately planned cloud implementations that may not be as easy to manage or as affordable as they imagined. While some forward- thinking companies have been able to pursue advanced enterprise cloud implementations, the average enterprise has achieved less than 20 percent public or private cloud adoption

Consulting Skills required

- **The existing business applications were created using the traditional IT paradigm. As a result, these applications are typically monolithic and configured for fixed/static capacity in a few data centers. Simply moving them to the cloud will not magically endow them with all the dynamic features of the cloud.**
- **The typical technology workforce of an enterprise is well versed in developing business applications in the traditional IT framework. Most of them need to be reskilled or upskilled for the cloud environment.**

Industry/Niche Solutions:

- **Building custom solutions for core business functions in certain industry segments is a critical requirement from the IT services organization.**
- **The small and medium-sized providers will specialize and focus even more on industry knowledge and radical customer orientation.**

Volume of server images deployed by industry,compared to maturity of cloud capabilities

Source: Mckinsey Enterprise Cloud Infrastructure Survey, 2016

- **Historically, enterprise business applications have been designed to run on custom-configured IT systems, each application requiring its own heavily customized configuration of computer storage and network resources. As a result,**
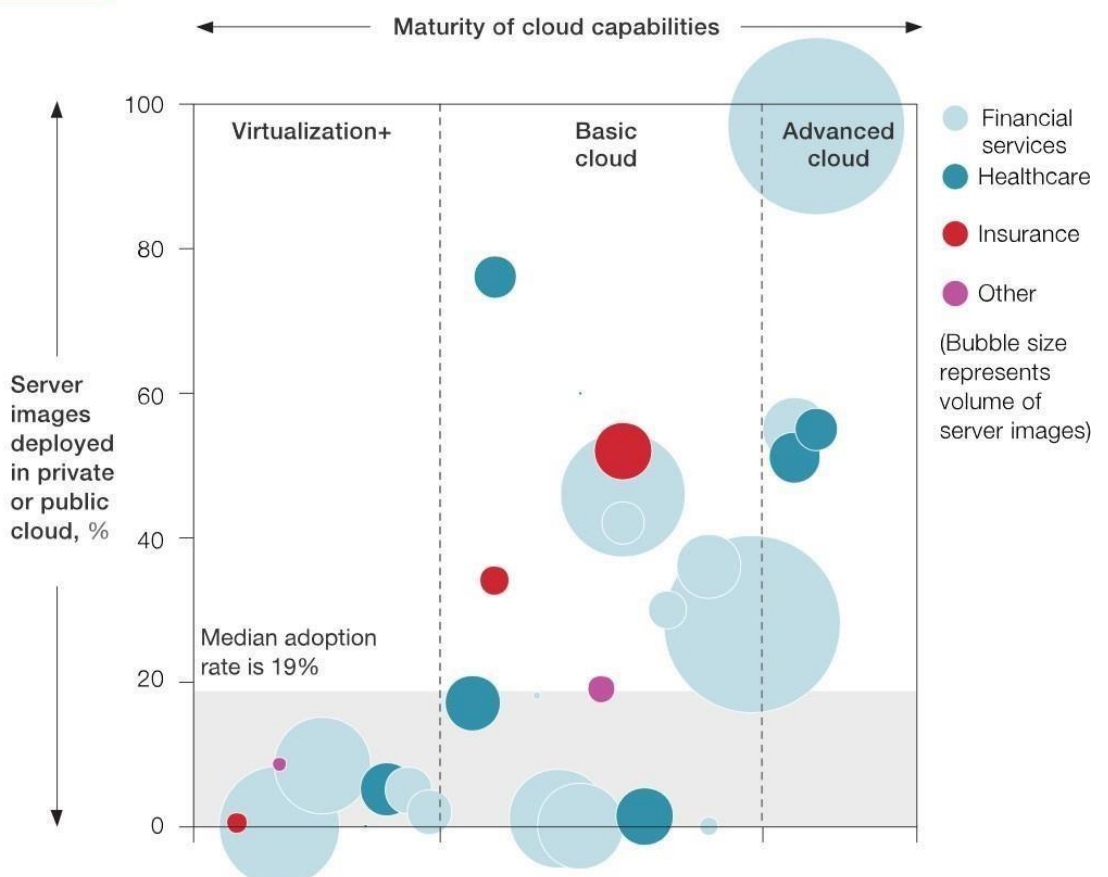
IT needed armies of administrators just to keep systems updated and running, to

manually add new capacity when demand is high, or apply quick fixes for issues such as low performance. As the number of IT solutions has increased, so has the overhead necessary for testing, integration, and maintenance. In a typical enterprise, just a fraction of IT personnel is focused on designing and developing the market-differentiating solutions the business cares about; the rest are working simply to keep the lights on.

- Existing applications will need to be refactored at the infrastructure and application layers to align with the security and capacity requirements of the public cloud. Security must be baked into these applications, and they must work in a more automated fashion. This requires significant attention from application teams, which can be hard to get.
- Companies can address this hurdle by creating a clear business case for legacy-application modernization, aligning the migration schedule with major application upgrades or replacements, and adopting foundational solutions (such as API frameworks) to make the remediation easier.

Middleware

Over the years, the role of middleware has proven central to address the ever increasing complexity of distributed systems that can be transformed in a reusable way. Application infrastructure middleware is considered as a building block for other software such as integration layer, business process management, portals, mobile applications, ERPs, and CRMs. Enterprises are anticipated to adopt middleware applications on a large scale as they provides seamless integration between disparate applications.

Acc to *Gartner*

The application infrastructure middleware market was valued at USD 33.82 billion in 2019 and is expected to reach a value of USD 51.28 billion by 2025, registering a CAGR of 7.3% over the forecast period 2020 - 2025. The application infrastructure middleware market has been primarily growing, owing to the wider technology trends, including migration to cloud platforms and services, higher demand for near-real-time data and analytics, a rapid increase of Internet of Things (IoT) endpoints, and the deployment of artificial intelligence (AI).

- Mobility among consumers, as well as businesses, is an ongoing trend towards increasing employee-consumer interaction and increased operational efficiency across multiple devices. About 67% of the workforce is expected to adopt its own devices (BYOD policy) for work, this further emphasizes the need for mobile middleware for mobile, enterprise data security, remote device, and remote data access management.
- The increasing adoption of IoT devices in both enterprises and consumer space is increasing significantly. With the advent of global adoption of 5G network by 2021, the number of IoT devices is expected to increase significantly. According to Ericsson, by the end of 2019, global smartphone subscription stood at 5.6 billion which is expected to reach 7.4 billion by 2025.
- As public cloud settles in as a mainstream deployment option, more enterprises are expected to adopt the public cloud to migrate, rebuild, or build new mission-

- critical customer-centric applications and assets, which typically requires complex integration and orchestration, which increases the need for middleware solutions.
- However, a major challenge to the market growth has been the presence of open-source software, coupled with the failure of large vendors to deliver PaaS offerings to businesses.

Cloud Deployment is Expected to Hold the Largest Share

- The modern cloud application infrastructure has evolved to provide better efficiency and scalability than existing on-premise deployment. The growing trend towards cloud services and the innovation in IoT further help boost investments in modern application infrastructure and middleware.
- Application infrastructure middleware is used in the context of public, private, or hybrid cloud computing for cloud enablement of existing and new applications. For instance, it is possible to turn existing custom applications into Software as a Service application with all the complex software architecture handled by platform middleware.
- The robust rate of the adoption of cloud services is creating an integration challenge for enterprises across the globe using older on-premise services, such as enterprise service bus (ESB) and BPMs, as they were not designed to handle cloud integration.
- However, among large enterprises, the departments are now being empowered to purchase, install, and utilize their own software on an ad hoc basis, especially in the case of SaaS solutions which often requires real-time integration, which is driving the market forward.
- Cloud-based solutions, such as iPaaS, have microservice architecture, which, by nature, provides high scalability, low latency, and high performance. Therefore, the growth of this segment is expected to be faster than that of the on-premise segment. Moreover, It is expected that after the outbreak of COVID-19 outbreak slowdown, demand for cloud infrastructure services and spending on specialised software is expected to grow.

Business Intelligence (BI)

Companies that inject big data and analytics into their operations outperform their peers by 5% in productivity and 6% in profitability.- Source: Big Data: The Management Revolution, Harvard Business Review

Traditional business intelligence (BI) and analytic models are being disrupted as the balance of power shifts from IT to the business, according to Gartner, Inc. The rise of data discovery, access to multistructured data, data preparation tools and smart capabilities will further democratize access to analytics and stress the need for governance. Gartner predicts that by 2017, most business users and analysts in organizations will have access to self-service tools to prepare data for analysis.

Analysts have long emphasized the need of a cohesive BI strategy to ensure an enterprise approach to DW&BI implementations. Due to a lack of a well-drawn strategy, many organizations create multiple, uncoordinated and tactical BI implementations, which result in silos of technology, skills, processes and people. Over time these silos mature and the inertia against a unified approach towards BI only builds up.

In a recent McKinsey survey of more than 500 executives representing companies across the spectrum of industries, regions, and sizes, more than 85% acknowledged that they were only somewhat effective at meeting goals they set for their data and analytics initiatives.

Acc to Dresner Advisory Service's 2018 Wisdom of Crowds® Business Intelligence Market Study.

- **Small organizations with up to 100 employees have the highest rate of BI penetration or adoption in 2018. Factors contributing to the high adoption rate for BI in small businesses include business models that need advanced analytics to function and scale, employees with the latest analytics and BI skills being hired to also scale high growth businesses and fewer barriers to adoption compared to larger enterprises. BI adoption tends to be more pervasive in small businesses as a greater percentage of employees are using analytics and BI apps daily.**

- **According to Reportlinker, The global Business Intelligence market size to grow from USD 23.1 billion in 2020 to USD 33.3 billion by 2025, at a Compound Annual Growth Rate (CAGR) of 7.6%**

- **Various factors such as the growing focus on digital transformation, rising investments in analytics, rising demand for dashboards for data visualization, increase in adoption of cloud, and increase in data generation are expected to drive the growth of the business intelligence market.**
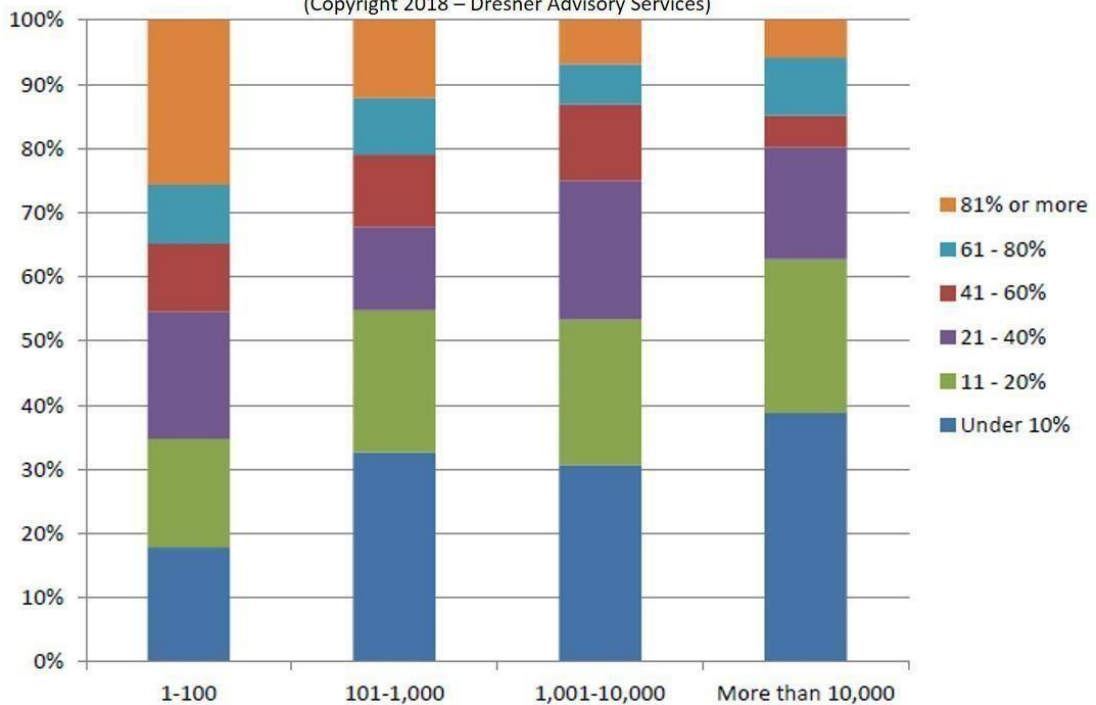
IT Services consulting potential

The support and maintenance service segment to grow at a higher CAGR during the forecast-period. The support and maintenance service segment is projected to grow at higher during the forecast period. The growth of the support and maintenance services segment can be attributed to the complexities of business intelligence solutions and existing skill gaps, resulting in the need for continuous support post deployment.

Penetration of Business Intelligence Solutions Today by Organization Size

(Copyright 2018 – Dresner Advisory Services)

Legend:
- 81% or more
- 61 - 80%
- 41 - 60%
- 21 - 40%
- 11 - 20%
- Under 10%

Categories (x-axis): 1-100, 101-1,000, 1,001-10,000, More than 10,000

Acc to Mckinsey, Data science is the easy part. Getting the right data, and getting the data ready for analyses, is much more difficult

As data science enters the mainstream, commercial analytics platforms and code-sharing platforms are providing algorithm libraries and analytics tools. For most organizations, this simplifies the practical application of data science. But that still leaves the matter of what to do with it. In our conversations, we heard a familiar refrain: "The majority of our time is spent getting the data," said a senior executive at an advanced-industries company. "Once we have that in a good place, the modeling is quick."

This means the implementation of BI becomes critical to extracting data from the operations and providing information to the AI tool for further insights. Implementation of BI will be the first step towards implementing Data Sciences.

Analytics Talent

The industry is finding it difficult to attract and retain talent in the Analytics field. According to Mckinsey, to fill any gaps in talent, 62 percent of survey respondents at top-performing companies say that they strategically partner with others to gain access to skill, capacity, and innovation. For example, a large, multinational retailer developed a strategic partnership with a start-up incubator that focuses on identifying cutting-edge technologies—such as drones—to transform the retail industry. The retailer found that employing a mix of in-house talent and smart, strategic partnerships with other organizations enabled it to get the best out of both, thus affording access to skills, capacity, and innovation on a much larger scale. Through the incubator, the retailer

formed partnerships with start-ups and venture capital investors. The company also created a compelling value proposition for attracting top analytics talent.

ERP Services

This is a market that continues to change and grow at speed. According to Gartner research, "the ERP software market grew 10 per cent to a global market value of $35 billion in 2018"1. And that growth shows no sign of slowing. Gartner forecasts that the ERP market will be worth $44 billion by 2022

This is expected to reach $78.41 billion by 2026.

By 2021, Gartner expects that ERP cloud enterprise application implementation labour rates will increase by 60 per cent due to high demand and a lack of skilled resources. Securing and building the capability to take advantage of modern ERP solutions will be a key enterprise challenge

Acc to a survey by Accenture, of CIOs across the globe, ERP systems are no longer just seen as back-office transactional solutions managed by IT. Instead, CIOs view the core ERP platform as the engine of the enterprise. And by enhancing and extending its reach out to the edges of the organisation, they're using it to transform their companies into technology businesses and realising the full value of investments. These leaders are changing their ERPs from siloed on-premise solutions into modern ERPs based on a digital core with real-time access to transactional data. They're creating pathways to data across the enterprise and infusing intelligence to help improve productivity, generate better insights and improve business decision making

The reality of today is that skills reach obsolescence rapidly and job descriptions evolve faster than ever. Accenture's Future Systems study showed that respondents believe that, in the absence of reskilling, 52 per cent on average of their IT workforce skills and 47 per cent of their non-IT workforce skills will be obsolete in three years' time. It also revealed that 86 per cent of top companies (the "Leaders") use intelligent technologies such as AI, analytics and machine learning to predict and match worker training with required job skills and even rewrite job descriptions (compared with 35 per cent of the "Laggards").5

According to Accenture, this is where the Service Providers excel. They can successfully combine innovation with the right team and the right execution (across strategy, consulting and technology) to make a true business-value-led transformation a reality. Indeed, IT service providers are key to finding and maintaining a competitive edge.

While there is a huge potential for the ERP market to grow, 75% of the ERP implementations fail and the reasons can be summarized as Poor project management.

Organizational change management and resistance to change. ... Inability to minimize ERP implementation costs. Inadequate internal and systems integrator resources.

Based on interactions with customers and end users by TEC (Technologyevaluation.com), ERP systems fall short on:

- **Data accuracy**
- **User experience**
- **Analytics**

This provides an opportunity for Mid sized IT service companies to build skills and expertise in specific industry verticals based on their customer profile and practice repeatability.

- The ERP market remains in a phase of rapid expansion, with total market size expected to exceed $49.5 billion by 2024 .
- In 2019, the global ERP software market grew by 9% resulting in a worldwide value of approximately $39 billion in total software revenue. (source Gartner)
- Revenue growth occurred for ERP in all areas in 2019, with strong growth for administrative ERP with financial management software (FMS) growth at 7% and human capital management (HCM) growth at 10% (source Gartner)
- Asia-Pacific is an emerging ERP market expected to achieve a CAGR of 13.2% through 2026 (source Alliedmarketresearch)
- Global market growth is expected to increase at a CAGR of over 8.1% over the next five years (source IDC)
- In a survey of IT decision-makers, 53% said ERP was an investment priority, in addition to CRM. (source Computerweekly survey)
- 50% of companies are soon acquiring, upgrading or planning to update ERP systems soon.(source technologyevaluation)
- The global ERP software market is expected to reach $78.4 billion by 2026 (source AMR)

ERP Software Market

By Component
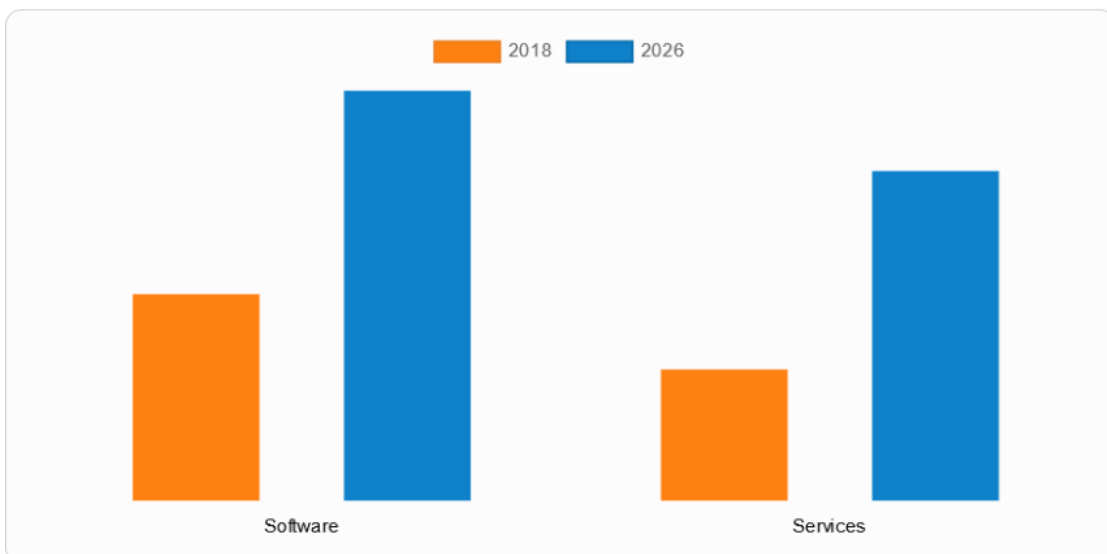
Services is projected as one of the most lucrative segments.

ERP software integrates all facets of an operation, including product development, product planning, manufacturing, sales, and marketing in a single database, application, and user interface. In addition, this software offers some degree of synchronized reporting and automation. Instead of forcing employees to maintain separate databases and spreadsheets that have to be manually merged to generate reports, ERP solutions enable staff to pull reports from one system.

The ERP Software market is segmented into component, deployment model, business function, industry vertical, end user, and region. Based on component, the market is bifurcated into software and services. By deployment mode, the ERP software market segments include on-premise, cloud, and hybrid. On the basis of business function, it is classified into finance, human resource (HR), supply chain, customer management, inventory management, manufacturing module, and others. Depending on end user, the market is categorized into large enterprises, medium enterprises, and small enterprises. The industry verticals covered in the study include manufacturing, BFSI, healthcare, retail & distribution, government & utilities, IT & telecom, construction, aerospace and defense, and others. Region-wise, it is analyzed across North America, Europe, Asia-Pacific, and LAMEA.

ERP Software Market
By Function

| 2018 | 2026 |

Finance • Human Resource (hr) • Supply Chain • Customer Management • Inventory Management • Manufacturing Module • Others
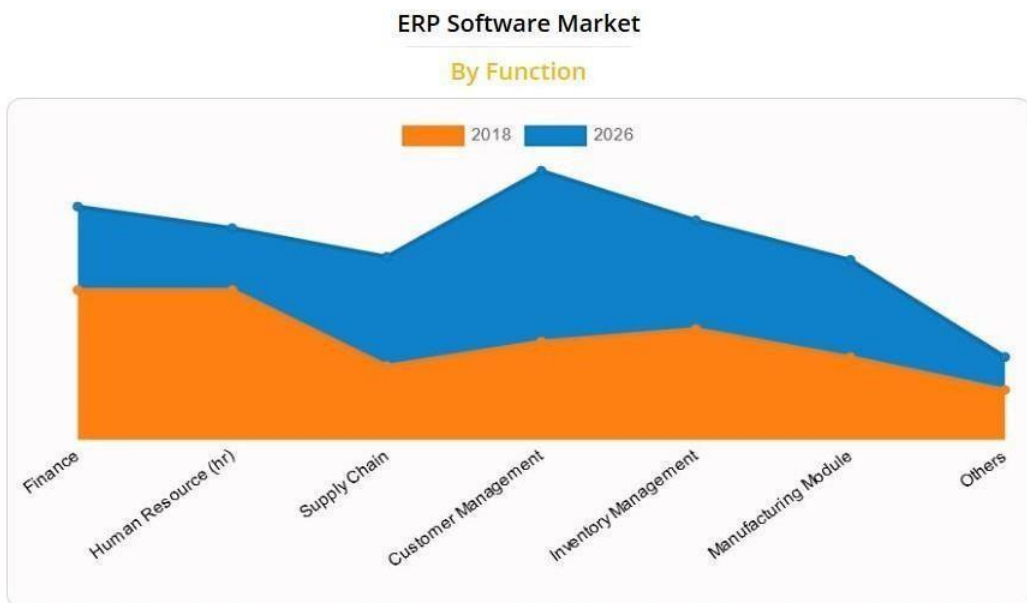
Finance holds a dominant position in 2018 and would continue to maintain the lead over the forecast period.

Chapter – 3

A number of key research questions emerge as an outcome of Literature Review. This research attempts to find answers to many of these research questions through theory testing and field experiments.

Key Research Questions

1. What's the performance impact of solutions at customer level ?
2. How do we deploy sales capability and value creation knowhow in launching specific services through an experiment in a firm?
3. How does one select specific strategies to increase probability of success in a service transition ?
4. What kind of experiments can enable us to address the issue of causality which prior research addresses through econometric methods?
5. What are the conditions under which solutions provide enhanced returns ?
6. How does one add intangible elements of services to tangible products to create an ideal fusion ?
7. What kind of challenges are faced while deploying sales capability and value creation knowhow ?
8. While building a solution centric business, can we examine if returns are negative in the short run ?
9. What should be the strategy of resource hiring and allocation in a transformation journey?
10. How does one build a consulting service capable of handling multiple customers simultaneously at optimized cost ?
11. How does one add intangible elements of services to tangible products to create an ideal fusion ?
12. What kind of challenges are faced while deploying sales capability and value creation knowhow ?
13. While building a solution centric business, can we examine if returns are negative in the short run ?
14. What should be the strategy of resource hiring and allocation in a transformation journey ?
15. How does one build a consulting service capable of handling multiple customers simultaneously at optimized cost ?
16. How to build services from product based linkages ?
17. How does one test outcomes of contingent hierarchy in a customer account ?
18. How does one build hybrid offerings in the form of a flexible bundle around some technology ? Does Peace of mind bundles and One stop bundles help a Systems Integrator during service transition ?

19. What kind of outcomes are achieved through subcontracting and consortiums ?

20. How can IT Systems Integrators create value by integration of hardware, software and consulting services ?

21. Does presales skills on products enable consulting services sales ?

22. How does a systems integrator carve out a space for itself by adopting elements of a low cost leader and a differentiator ?

23. Whats the impact of service revenue growth on accounting metrics in a firm undergoing service transition ?

24. Do customers look at solutions as optimization tools to enhance business efficiency at minimized costs ?

25. What kind of challenges arise in a long selling cycle and how does one address them ?

26. Can services be added that precede the sale of the core product?

27. Can services be added that follow the sale of the core product?

28. Can services be added to accompany the sale of the core product ?

29. Can the product be updated with service?

30. Can Processes unrelated to customers' core competencies or strategic objectives be taken over?

31. Can services change the way customer acquire products?

32. What about the idea of starting by creating a new separate service org ? Does it work or are there huge cost pressures ?

33. Creating a sales strategy for services growth and rolling out the same in key customer places can give us better insights on real life outcomes, positive and negative. How do we test this ?

34. Under financial risks, it can be explored under what situation, in a services initiatives, revenue grows but profit don't. How does one arrive at a solution to this problem ?

35. Does specific service transition strategies enable IT Systems Integration firms to be resilient during difficult economic times ?

36. 3How do we demonstrate practically a deliberate, systematic , well structured service transformation effort and keep measuring outcomes ?

37. How does one investigate an ideal portfolio configuration in terms of products and services ?

38. How does one manage a services sales force in addition to an existing product sale force ? Is it advisable to reskill a traditional sales force and build a presales technical team to lead services sales ?

39. How does deployment of resource mix , learning capability and resource fungibility contribute to outcomes achieved during the journey along the value chain , by a mid sized IT Services firm.

Chapter – 4
Interview Findings

INTERVIEW QUESTIONS FOR ENTREPRENEURS OF EMERGING SYSTEMS INTEGRATORS

1. How has the IT services industry engaged over the last couple of decades?
2. Has changing customer preferences and disruptive innovation affected your business model? Is there a need for reinvention of your business model?
3. Do you agree that midsized traditional IT Systems Integrators need to transform immediately? If yes, what is your idea of transformation?
4. What is your objective of enhancing upon a transformation journey? Do you expect growth, profitability, improvement in cashflow and firm valuation?
5. How do you think maximum value can be generated for your firm, given that there is a core business? How do you think new initiatives and core business can be harmoniously integrated?

INTERVIEW QUESTIONS FOR CIOs –

1. How has the IT services industry emerged over the last couple of decades?
2. How do you think CIOs have changed their preferences over the last couple of decades?
3. How has disruptive innovation affected your business model? Going forward do you expect a strategic change in your selection of products and services because of innovation? Is there a need for reinvention of your business model?
4. How important do you think it is for traditional Systems Integrators to transform into consulting organisations for offering higher value creation to customers? What would be your expectations from such a consulting organisation whom your organisation can engage in IT services?
5. If you agree that transformation is a need for traditional SIs, can you suggest some areas where good-centric firms should invest in building consulting and implementation services? And why so?
6. How important are the following services for your organisation – IT infrastructure consulting — database services (and middleware) services, cloud migration and management services, analytics services, ERP consulting and Implementation?

INTERVIEW QUESTIONS FOR CONSULTING LEADERS

1. How has the IT services industry emerged over the last couple of decades?
2. How do you think CIOs have changed their preferences over the last couple of decades?
3. How has disruptive innovation affected your consulting business? Going forward do you expect a strategic change in your selection of products and services because of innovation? Is there a need for reinvention of your

consulting practice?

4. How important do you think it is for traditional Systems Integrators to transform into consulting organisations for offering higher value creation to customers? What would be your expectations from such a consulting organisation whom you may like to engage in IT services?

5. If you agree that transformation is a need for traditional SIs, can you suggest some areas where good-centric firms should invest in building consulting and implementation services? And why so?

6. How important are the following services for your organisation – IT infrastructure consulting — database services (and middleware) services, cloud migration and management services, analytics services, ERP consulting and Implementation?

7. Do you think instead of rolling out pure services, traditional SIs should focus on hybrid offerings which utilizes their existing knowledge of product installed base and helps in offering value creating services?

INTERVIEW QUESTIONS FOR CFOs

1. How has the IT services industry emerged over the last couple of decades?
2. How do you think CFOs have changed their preferences over the last couple of decades in terms of realising returns from IT investments ?
3. How has disruptive innovation affected your business model? Going forward do you expect a strategic change in your selection of products and services because of innovation? Is there a need for reinvention of your business model?
4. How important do you think it is for traditional Systems Integrators to transform into consulting organisations for offering higher value creation to customers? What would be your expectations from such a consulting organisation whom your organisation can engage in IT services?
5. If you agree that transformation is a need for traditional SIs, can you suggest some areas where good-centric firms should invest in building consulting and implementation services? And why so?
6. How important are the following services for your organisation – IT infrastructure consulting — database services (and middleware) services, cloud migration and management services, analytics services, ERP consulting and Implementation?

INTERVIEW QUESTIONS FOR THE MD OF A GLOBALLY LEADING SOFTWARE OEM

1. How has the IT services industry emerged over the last couple ofdecades?
2. How do you think CIOs/ CXOs have changed their preferences over thelast couple of decades?
3. How has disruptive innovation affected your business? Going forward do you expect a strategic change in your positioning of products because

of innovation? Is there a need for reinvention of your product strategy?

4. How important do you think it is for traditional Systems Integrators to transform into consulting organisations for offering higher value creation to customers? What would be your expectations from such organizations if you look at them as partners in product resell , supportservices and implementation?

5. If you agree that transformation is a need for traditional Systems Integrators, can you suggest some areas where good-centric firms should invest in building consulting and implementation services? And why so?

6. How important are the following services for CXOs of customer organisations – IT infrastructure consulting — database services (and middleware) services, cloud migration and management services, analytics services, ERP consulting and Implementation?

7. Do you think instead of rolling out pure services, traditional Systems Integrators should focus on hybrid offerings which utilizes their existing knowledge of product installed base and helps in offering value creating services? By hybrid offerings, one means a set of offerings bundling products and value-creating services together?

INTERVIEW QUESTIONS FOR THE CONSULTING LEAD OF THE FIRM-

1. How has disruptive innovators and changing customer preferences impacted your industry?

2. Why do you think there is a need to transform a SI organisation to Consulting organisation?

3. Do you think building solution strategies around DB, Middleware, Cloud, BI and ERP are capable of creating sustainable business? Why so?

4. How have you implemented optimised deployment in services business in your firm? Are you in a position to cater to multiple customers across geographic utilising the same resource? Please elaborate your experience.

5. Has hybrid offerings helped your customers as well as your firm? How?

6. What's your experience in customer accounts, where presales consulting leads business development?

Ex Management Consulting Lead of a Big Four and Founder of a Strategy Consulting firm

- In first decade we considered transaction systems, the next decade we considered analytics, data warehousing, MIS and now we are going through intelligence. That's the journey of last few decades.

- A huge change in CXO behaviour – customers are much more involved, they are technically well qualified, they can constantly utilise IT power to change their business model because of the various ecommerce technologies. CXOs previously never thought of these kinds of things but now but they are now thinking of manufacturing side, distribution side, customer engagement because they want to explore more and more digital power.

- Yes, the customers are changing, they are going for disruptive business model, so consultants should have to change their business models, understanding of strategy, technology. Few decades back we did not have the awareness of industry's trend but now one needs to know how IT will shape up, from MSME to big business house to start-ups to MNC to national companies nobody wants to do any strategy when we are not being able to link it to the future evolution of the technology. It is changing the business model, strategy model, revenue model, organisation structure model, security model- in a one word everything.

- IT system integrators should try and transform. But that does not mean that the hardcore IT implementor who always is in hardware and network needs to completely move out and diversify in different area. The customer is looking for is much more integrated IT solution now, so they actually looking for multi-dimensional, multi skilled kind of approach to be taken in any consulting opportunity. There is a product development side also, product citation is also very important these days, consulting and IT include the productization approach.

- But if there is a need for the client, definitely to have an integrated solution but it doesn't mean that there is no need of hardware support, the nature of the hardware might have changed; so, these organisations were primarily selling hardware and software separately but now they have to start learning new hardware and software. Therefore, the need of the hardware is and will be always be there but also with integrated solution. People who will build a cloud solution should also provide hardware solution as well as the software solution. Thus Systems Integrators should have complete capability in integration of hardware, software and cloud.

- The value chain movement has to be determined depending upon customer's need and what the organisation wants to be known as, in the market.

CIO of a Battery Manufacturing Firm

- According to me, the IT services industry has progressed.
  in a new direction over the last two decades.
- Rather than being a service oriented industry as it was.
  more and more services are getting into system integration part of it.
- Architecture related services are becoming more of a system integration job rather than limiting such companies to IT Services.
- CIO preferences have changed-
- In the 90s and the 2000s it used to be more of a in house, kind of a architecture and system that we were accustomed to.
- And then gradually the shift had happened to service related architecture
- So that the shift has happened to the cloud be it hybrid or private or public.
- Many CIO's have shifted their entire load of it into the cloud.
- In-house related IT infra has reduced substantially other than endpoints.
- CIOs today, sit with the business leaders and try and understand what is the kind of competitive advantage that we can get from this disruptive innovation that is happening in the Industry.
- Before a project used to take six months to one year, now people can't wait for that long.
- So now things are happening very quickly because of this disruptive innovation, and because of various innovations that have happened like analytics cloud.
- So I would say that the disruptive innovation has helped the business.
- So for traditional system integrators, it is very important that they get into the consulting mode as well, because innovation is happening regularly and at breakneck speed.
- They have to keep up to speed with whatever is happening in the market and advise the customers on what to get into.
- Systems Integrators must do consulting and advisory services and help the customer get the best solution that is available and can deliver quickly.
- First of all, they should look at market trends.
- Today, if you if you see Hyper converged infrastructure is a market trend- it is something that is taking up the market.
- Other than that, there are some niche services required in various markets.
- A generic CRM product or a generic ERP product is not sufficient to run the Business Today.
- Cloud services are very important as customers would move a lot of applications to cloud anyway.
- ERP Consulting services can continue as there would be a continuous demand

Ex ERP CONSULTING PRACTICE DIRECTOR OF A BIG FOUR AND FOUNDER OF AN ERP CONSULTING FIRM

- There are gigantic multinationals who are either growing vertically or horizontally and then there are a plethora of start-ups who are concentrating on niche areas, primarily concerning emerging technologies

- CIOs are more equipped with their exact requirements and probable solution offerings, they know the market well, and the various alternatives.

- Now strategic consulting and technology solutions are tightly coupled. Data analytics is playing a big role in consulting. So the approach and methodology have to change.

- Such transformation is a requirement for traditional Systems Integrators to grow and be profitable. The customer expects IT firms to advise on process improvements and business best practices while implementing an IT system.

- Areas are - Process consulting and ERP implementation; Management consulting and data science. These are interdependent.

- Database, middleware, infrastructure, cloud and analytis services will become very important after one decides to implement an ERP. Because they are interconnected.

- Yes, Systems Integrators should focus on hybrid offerings.

GROUP CIO OF A PRIVATE UTILITY COMPANY

- Earlier, if the end user wanted a report, it would take days to get that report and if we take as the benchmark of that there been a change as we migrated from Cobol to an oracle – RDBMS base system and now the entire computing access to information even raising a query has shifted from back office to end user's desktop. Today over 3000 end users of the utility company have access to over 400 applications running out of our corporate datacentre and most of the queries can be run by the end users and they need not depend on the IT people to reprogram and generate a report and on the fly the queries are generated by the end users and instantly they get the response on their computer screen.

- So, look at these transformations, IT has gone through major transformation in terms of technology on the hardware, software and network side.

- But today because of the cost pressure more and more CIOs are looking at the cloud.

- The other reason is that cloud over last 10 years has matured a lot- if you see the cloud services like amazon, azure, Google, Oracle but today after so many years CIOs have got more confidence and faith on security so I was saying from the CIO's perspective, many CIOs are looking at cloud and we need to be more innovative, means achieving cost leadership.

- RPA, IOT these are emerging industry 4.0 technology, to save backend employees'

time and backend processes and also it is improving efficiency, so that's the innovation.

- The traditional system integrators will also have to upgrade themselves- they should be aware about the latest technologies, market and they need to get into consultancy roles such that they can value add as a complete consutant ,through total solution offerings because this is not just product for product sale, but getting the best value out of the product they selling, they should also think to upgrade their skills otherwise they will perish.

GROUP CIO OF A LOGISTICS, REAL ESTATE AND AQUACULTURE GROUP

- After realizing value from their focus on services around systems of records, both in terms of revenue and resources – Systems Integrators have gradually started focusing on services on systems of differentiation and systems of innovations, off late from the clients' expectations.

- Undue prolonged focus on traditional services (around systems of records) has pushed many of them out of their stupor to resort to knee-jerk reactions in realignment with new technology and its economics, cloud computing in particular

- CIOs have started looking at service providers that are focused on specific deliverables, flexible in their delivery models and cost-effective, a clear shift from focusing on big service players only.

- Learning from their experiences, CIOs have started minimizing number of entities in a value chain for enhanced predictability of project outcomes and fixing accountability – thereby focusing on lesser number of proven IT service providers. This preference has fueled adoption of cloud services.

- Traditional SIs have been dependent on traditional services keeping systems of records and their life cycle in mind. This tendency went on for longer duration than it was desired in technology domain. Meanwhile choices of CIOs have changed due to advent of newer technology and delivery models. It is imperative for such SIs to transform, expand and elevate their services in newer fields of technology and its economic model. As a CIO, I would expect such SIs to step up from their core services around infrastructure/platform product re-selling (hardware, network, software licenses etc.) into more value-creating services around platform and solutions services.

Some of the areas that such SIs could focus are

1. Modernising application deployment platforms
2. Information security services – data and access security
3. Transitioning existing solutions into cloud
4. Data Analysis : from data visualization to business intelligence
5. ERP/CRM implementation
6. IoT, Blockchain – based solutions

- This is how such SIs could create a talent pool to transition to higher-value consulting services providers around platform technology. Otherwise, usual route of creating revenue generation around commodity services (like re-selling hardware, network, software licenses etc.) would not be sustainable in these era of cloud computing.

- Cloud migration, analytical services, ERP consulting/implementation are probable areas that our organization are focusing at present, or will focus in near future.

Senior Vice President and Regional Managing Director of a Globally leading Software OEM

- The IT services industry has been through a rampant transformation in the past few years. Focus shifted from international markets to domestic markets or a hybrid model given rise in demand in the domestic Indian market
- Then the need to continually innovate and be relevant makes IT services firms want to expand and modernise. With the disruption being caused in the market with emergence of startups, with the growing number of young firms – some now Unicorns, across a variety of fields, traditional business models are being threatened. Hence the need to innovate or expand or diversify becomes very crucial for IT service organisations.
- The pandemic threw up another challenge for this industry, with cloud gaining much more prominence and acceptability, across sectors and across the entire country, it became essential for IT service firms to acquire the requisite capabilities in order to capture this growing cloud market.
- Acquiring relevant and current skills is a very important aspect of development and being part of an IT service organisation.
- Cloud technology has displayed how it can be cost efficient, help improve price/performance, help companies scale/expand, makes sure to keep data secure and many more advantages. This has impacted how customers view technology for their organisations and to manage their important workloads or business interests.
- Cloud has been able to optimise resources and investments and CIOs/ CXOs are seeing that. Any company today, without a cloud strategy is going to be affected badly, leaving them behind.

Head of Cloud Application Engineering, APAC of a globally renowned Software OEM.

- The beginning of this century saw the proliferation of enterprise applications more specifically the ERP and services around that. The implementation services around ERP was one of the core services offered and there was an emergence of services around them like support services, integration services etc. This later extended to emergence of industry and domain services linked to unique business processes. The specialization in the industry process led to custom applications being developed which morphed into intellectual property for those service organizations leading to growth in footprint in those industry verticals.
- The emergence of hyperscalers and public cloud service providers have shifted the kind of services that the IT service organizations are offering. The focus on

integration services, digital transformation has been gaining momentum in the last few years.

- There has been a rapid shift from process to data.
- The CXOs are looking for partners with
    1. Industry experience
    2. Transformation experience
    3. Innovative ideas
    4. Customer success stories or reference
    5. Operational efficiencies (ie <u>lowest cost</u>) and time to value
- And not plain vanilla IT services organizations with IT skills.
- The expectation from consulting is to bring innovative ideas to the table that can bring value to the customers. The alignment of disruptive technologies with the potential business driver will be the game changer.
- It is not necessary for the traditional System Integrators to change into Consulting organizations. They can be purely Managed Service providers. They can bring skills to the table which needs to be upgraded and contemporary. They can be aligned with multiple Consulting organizations to provide services in line with market demands. However, there needs to be close partnership between Consulting Organizations and System Integrators to fulfil market demands. For eg: A System Integrator can develop specialized solutions in line with the anticipated demand projected by the Consulting organizations and go to market together with the Consulting organizations. The solution offering can be in specific industry vertical or specific technology offering like a Blockchain solution that can have multiple use cases.
- Traditional System Integrators have hard skills in coding/product implementation/integration framework/database management/networking/security etc. They have to constantly reinvent themselves to changing technologies. Consulting can be a good diversification for the Traditional Systems Integrators to expand their range of services and bring more value to their offerings.
- Technology is getting redundant rapidly and therefore time to value is a key consideration.
- Therefore constant training and learning should be an integral part of these organizations. Investing in skills in future technologies is critical to sustain.
- The hyperscalers or the product vendors rely to a great extent on the System Integrators or partner's relationship with the customer. The System Integrators should provide a comprehensive set of services to the customers. They need to partner with the customers so that they are aware of their customers journey and able to provide services to enhance their business outcomes.
- The cloud service providers are providing a lot of the infrastructure consulting to their customers. What is probably required is the migration services, analytics and ERP implementation services. A lot of the other services are insourced.

Partner of a Globally Leading Testing Software Org

- Last couple of decades IT services Industry transformed phenomenally. During 80s the major evolution was networking the stand alone PCs through Client Server and Enterprise Computing. This development encouraged IT Services Industry to develop application, which can be used by multiple users inside the organisation. In 90s the need for integrating disparate networks and applications into a unified enterprise-wide infrastructure. During this time internet standards like TCP/IP and Web Services evolved to become common platform for the IT Services to build application which allows interoperability.

- In early 2000 there was a huge disruption in IT Industry with cloud computing. IT services industry helped the companies to move their customer's storage from computational and storage solution over the internet. Cloud computing enabled applications became popular. On Demand access to computing resources like Network, Storage, Application and Services without the trouble of maintaining them. The scale up and scale down model really helped the SMEs to save huge amount of initial cost during start up stage and IT services industry created modules meeting these requirements across Industries.

- IT made a quantum leap with the usage of AI, ML and NLP and IT service Industry has evolved in the last two decades using these digital disruption to meet the competitive environment and helped across all Industry segments.

- CIOs and CXO have started using data for their decision making. The result is purely data driven – thanks to Analytical tools .But thanks to the integrated and on demand real time data the CIOs and CXOs areable to decide with facts in hand

- As per recent studies from 2022 most of the traditional on-prem customer will move to Cloud and the migration and maintaining, testing becomes a routine compared to the traditional Systems Integration. The customers are expecting guidance from IT specialists and consulting organisations to advise them on how to compete in the market and use disruptive digital marketing and latest IT products and services to their advantage.

- The responsibility of the existing SI partners to become advisors and educate their customers the use of latest technology to their advantage and help their customer's customers to be successful.

- As SI partners we would like them to start introducing our product with knowledge, conduct POC if required and provide the date on the advantages of using products, Implement the product once receiving the order successfully. This service continues as we sell annual subscription, the customer renewal is important. Therefore once the reseller is able to resell our product, they have a customer who pays every year, upsell, cross sell additional products and maintain them as customer for ever.

- Build technical team in specific specialised stream like ERP, HCM, CRM etc

- Work with OEMs who can help the customers in stitching the solutions because the customers expect the Sis to bring the total solution and not bits of solutions. Therefore end to end products/services are required to offer.

- Software testing solution – Build a practice to test the products before going to production

- **Industry domain experts.** As IT cuts across multiple industry it is better to focus on specific industry and build Industry experts and domain consultants to help customers to understand the current challenges industry is facing and how their competition is approaching their challenges
- **Customer success team.** Thanks to IaaS, PaaS and SaaS cloud based subscription based solutions, retaining customers has become a key requirement. The SIs should build their customer success team should focus on existing customers by way of giving extraordinary support.
- As mentioned earlier, on-demand real time data helps in taking right decisions. Database service, analytical services, cloud migration and management services and ERP became crucial to run their day-to-day activities .
- As existing SI partner of a customer, it is the responsibility of the SI partner to educate the customer about the latest IT changes and how these changes can impact their business positively. The second stage is to utilise the resources which are already invested earlier by the company with minimum written off hardware and software.
- While transitioning the It environment of their customers, the SI partners should approach hybrid model by utilising the existing investment and also use scale-up scale-down cloud to their advantage to transition over a period of time.

Ex Big Four Consulting leader and Independent Consultant

- In the late nineties, the industry was dominated by a few names such as Infosys, TCS, Wipro, CMC, HCL and ICIM. A few of these have just vanished. Others have moved on and vacated the systems integration segment in the domestic market.
- Later, the government also took to adoption of IT and we saw large projects like the MCA21, Income tax computerization, VAT systems and Treasury computerization in different states. As a result, most of the large players started concentrating on providing services and vacated the space of equipment supply to smaller players such as Ingram Micro. This also saw the emergence of local players who were able to grab a slice of the hardware business while operating in limited territory
- Another important change was the emergence of commercial-off-the-shelf software which led to many global solution providers such as SAP, Oracle, SAS etc. expanding their footprints. Overall, the business was growing rapidly and Indian IT companies were acquiring skillsets to be ready to challenge global players
- Another key event which is shaping the industry is the emergence of SMAC (social mobile, analytics and cloud).
- At the same time technological obsolescence was creating new challenges. We have therefore seen many organisations migrating to new platforms or even discarding previous solutions and adopting new solutions over the last decade. At the same time the organisations have started looking at IT in a new way i.e. as a tools to expand business not just to support it. So CEOs are willing to spend big money on analytics, social solutions or tools like Salesforce to ensure that their

organisations can expand their business and are be relevant for the customers. This has been increasing the IT budget.

- Another aspect that need to be kept in mind is that initially, when organisation were implementing project with small budget, they would buy hardware and software separately and then grapple on their own with project management and accept delays in project implementation. Now, IT has become much more important for the CEO and organisations are planning big projects. They are increasingly using the services of Consultants to design, procure and supervise projects. The focus is on not just IT but business transformation and for that CEOs are willing to shell out large sums to engage experts like MBB (McKenzie, Bain or BCG) at the highest level and the Big 4 (Deloitte, EY, KPMG and PwC) at the next level.

- As mentioned earlier, the IT business is no longer just about IT. Instead it is about the business transformation. Many companies are implementing ERP solutions and analytics solutions

- However, there is one emerging disruption which may impact many players in the IT industry and that is the adoption of IT by the micro, small and medium enterprises. Increasingly, these organisations are realising that stand-alone adoption of IT is a costly exercise and difficult to sustain.

- This will be a challenge for all the local players, solution providers as well as Consultants. If this trend catches on too much people will stop investing on local equipment or services to a very large extent and the solution will remain in the cloud somewhere and will need much fewer people to manage them. Fortunately, these are many large companies will sufficient budget over the next decade but we will have to reinvent ourselves in future.

- As mentioned earlier, the new customers are starting to shift their spending to on-cloud solutions. As a result, their requirements for on- premise hardware and related systems integration is reducing substantially, The SIs business model is therefore likely to face increasing competition with lower revenues. At the same time, the internet is creating new challenges for the customers with its share of spam, malware and related threats. The customers will there have to engage experts to support them on their local equipment on these aspects. Therefore, we will see the SIs increasingly move to services business with focus on handholding support, managed security services and business continuity support.

Importance of services

- IT infrastructure - I have already mentioned that IT infrastructure supply business will be shrinking in future for the local players and a few Cloud Datacentre Service providers will corner most of it.

- IT infrastructure consulting – since the cloud players will be pushing for ready out of the box kind of solutions, only a few large companies will be willing to invest in this kind of services. One key emerging area will be consulting for "security". This market is likely to grow manifold.

- Database services- Only large companies will be engaging experts for database management on their own. At the same time, given the huge focus on data, the scale of data will increase manifold. Therefore, this will be a winner.

- **Middleware** – Given that IoT and integration will be happening for many more organisations, middleware related skillsets will be in high demand.
- **Migration management** – Of course, the very nature of IT industry is such that migration services will always be in demand since software providers keep releasing new versions..
- **Cloud services** – We will see proliferation of cloud services but these will be dominated by a few players. The smaller firms could get business from niche segments such as providing a 'complete business service' based on a combination of cloud hosted application and local level resources deployment on temporary basis for the client and charging on pay-per-use kind of models.
- **ERP Consulting services and implementation** – given that many Indian organisation are still to implement ERP. These services will continue to be in demand.

Founder of a Systems Integration and IT Services firm

- I started from 1986- Basically we started getting into services basically in the late nineties.
- So actually, real services started with networking and ERP.
- For example, IBM was the manufacturer of their mainframes and their servers only IBM could take those services . Initially OEMs used to control the services related to their products.
- I think the real services industry blossomed or evolved more from the hardware perspective though, like people putting physical infrastructure or physical network, wide area network, local area network.
- Then . managed services mostly on the hardware side or operating system site
- So those days software was still not a very big item.
- You know software was very proprietary those days, so it was again, limited to OEM like SAP or similar.
- And people started taking remote support, so in remote support we used to call it RIM - remote infrastructure management.
- In this century, ever since the cloud came in , penetration through the Internet bandwidth increased exponentially.
- 21st century,small companies could also experiment with world class hardware and software solutions to see whether they can get business outcomes out of out of it- implementing technology.
- In 2014-15 when basically cloud really penetrated, that is when small firms started presenting themselves to customers as solution providers.
- Systems Integrators were box pushers till 2013-14.
- Volume licensing, hardware, software, storage, network were mainly the products till 2013-14.
- You could not build your build your long term business model based on this kind of activity.
- Our business changed when the cloud came in because that is when the concept of annuity came in.

- The concept of complete migration service came in when the customers start going into the cloud.
- First of all multiple applications go into cloud
- You have an opportunity to migrate their applications to cloud, sometimes they ask for modernization of the application then you are in the cloud adoption process, you have opportunity to also give them solutions on governance.
- Investing in cloud adoption is important and not only in cloud resell.
- As a box, if you don't add value to cloud, there is no value.
- Invested in some data to app modernization to cloud migration services, collaboration services, security services.
- Now all those are coming handy today because ,customers want everything in their business environment today to see that they achieve desired business outcomes.
- The growth in cloud has completely changed our gross margin, and predictability in business .
- Today we can predict our business- what next year I'm going to do at least 90% in the first week.
- So if I have to do a ₹100 for example as a gross margin, I know ₹65 is already there in my pocket because of this predictable business model and baseline which I have already, by virtue of cloud .
- So this is the kind of change cloud has brought in and this helps us in investing more in people as well as in our skills.
- Whatever systems integrators are doing right now, they should not stop .
- So they should continue to do what they're doing, but they should optimize the cost there and they should not invest further in that much .
- They should actually tie up with world class OEMs like Microsoft or a AWS or Google or Oracle or equivalent.
- They can partner and go to the existing customer, penetrate with cloud, or penetrate with new age services.
- You have to build skills and when you build skills, the criterion is that you need to be certified at an advanced level in line with what the OEM needs.
- OEMs should have a strategy with SIs and build a business plan , document it and this plan should be monitored.
- Partner has the customer connect , which brings value .
- They should leverage that and see to it that they actually penetrate those customers of theirs and offer them first.
- Start from micro cloud migration services.
- Then application services and data services and collaboration services.
- Very important to keep investing in skills.
- You have to care about your profitability. You become part of the OEM rebate program.
- They you become part of the OEM compensation programs. So for that compensation program you have to have advanced certifications .
- You might have any partnership, but if we don't have advanced certification, the compensation is absolutely almost nil.

- It all depends on the individual entrepreneurs. Whether he wants to build an organization which is sustainable, or whether he wants to be a work as an owner.
- People who are not evolving. It's a death nail for them. They have to be in the services industry. They have to be in a predictable business.
- Whenever you're doing a transformation, the transformation should be measurable. So the right KPIs have to be set.
- Our KPI, which has got four parts. First part is the financial part. The second part is the customer or the OEM part. Third is the process part and the 4th is the learning and development.
- Finance means what the gross margin and top line.
- How many days you should recover your money or interest costs? within what increased cost you should operate? When you're transforming, you have to be give targets lower than the potential, because obviously people are not ready immediately.

Founder of an Emerging Systems Integration and IT Services firm

- It has taken centre stage in terms of complete outcome delivery from customer stand point. Increasingly intelligence is being taken out of hardware (unless they are created as appliances) and being transferred to software defined systems . This in effect is helping consolidation and creation of centralised application and data management dash boards and which in effect minimise lead time for deployment and redeployments , help synchronisation of applications and data across platforms and geographies easier and faster. With more and more platforms and data centres starting to synchronise along with usage of BI it's only natural to see a tectonic shift.
- It is bound to affect if you are looking at traditional to a services led org. Yes there is a need to reinvent and we are already on that path.
- Mid size system integrators need to decide their journey soon . They can choose to be in a space which will still be infra sensitive and find a niche or they can look at creating some IPs in case they need to transform to a services led org or close shop.
- Keep the organisational experience of deploying and delivering complex service as the front to rebrand the organisation as a services led organisation and , create an IP in the services space, reach out to as many customers as possible is the fastest possible time with your story and tie up with companies who can hand hold you in this journey .

## Founder of a Specialised ERP Consulting firm with global presence

- From being considered as a Supplementary service in a business environment, Information Technology has come a long way in last few decades. It is now

considered to be a Business Enabler. No business can prepare a startup or a growth strategy without considering the information technology role in it.

- Back in the early days of IT, businesses considered IT as a supplementary service, additional cost, something which was optional. Most business could do what they wanted with the Spreadsheet based products like IBM Lotus 123 or Microsoft Excel.

- Standalone computing needs were slowly becoming irrelevant, and business required networked solutions with multiple data access points for entry, review, and statistical analysis. This is when the Novel Network systems came into play and an array of software applications which were multiuser enabled came into existence.

- The invention of Internet back in early 90's changed the entire foundation of computing. The IT evolution now became a revolution. From mainframe based large systems with dumb connections, the need was felt for intelligent connections that can perform multiple tasks at local level and only access the central system for data retrieval and storage. This led to return of the classic novel network concept in the avatar of distributed data networks. Under this approach intelligent nodes could perform complex task and retrieve and store data in multiple systems that were connected over the internet.

- The early 21st century saw the Internet becoming a primary backbone of Information technology with the advent of Cloud Solution. Connected Networks over the Cloud with Infrastructure less solutions where software played a primary role and IT Infrastructure played a secondary role come into existence. This has now become the Foundation standard for any information technology solution. This has opened an unparallel connected systems capability giving microscopic worms of everything connected to everything. For example, you prepare an invoice in your billing system, the invoice automatically reaches your customer, the customer makes on online payment that reaches your bank, and the bank system transfers that entry to your system to knock off the invoice which was originally sent.

- As it stands today, instantaneous result and instantaneous gratification are the norms, with simpler Product based solutions and self help no-code application designs that lowers the need for IT services. In short, we are in an era where no one really needs to buy a bulky high-end mainframe system with operating system and database choices. They just need to have a high-power intelligent node or connection by way of a laptop, desktop, mobile phone etc. and cloud-based subscriptions to software of choices, which can be purchased, renewed, cancelled at a click and which can also be customized at a click with a no-code environment.

- I believe that not just the preferences of CXO have changed from Information Technology, but also the role of CXO has been transformed in a unprecedented way in the 21st century.

- As you can see, not just the preferences, but the role of a CXO now depends on his/her ability to exploit and capitalize on the backbone of the Modern Cloud connected applications with artificial intelligence, chatbots and self-help framework.

- The role of CIO from its original mindset has also undergone a drastic change. In the early times, there was no CXO position for Information Technology. An IT Manager would suffice since it was not considered to a director level functional department.
- However, this changed, as business heads demanded that IT function be aligned with the business and not just the technology. The CIO role now transformed into 2 roles, a CTO role that really worked in the background to implement and manage the IT Infrastructure and the CIO role now became truly business aligned Applications role. Today the CIO needs to know about the cloud connected applications, its use, advantages, and fitment to business requirement. A CIO plays a front-end role with the business, at times a CIO may also have a board seat.
- Our Consulting business is primarily on the ERP side. The major disruption here has been the shift to Cloud based Applications and Technologies
- The consulting practices approach also significantly differs for Cloud based technologies since they need to be more agile, easy to learn and implement, easy to make changes on the go. Hence the consulting practice methodologies, principles and staffing and hiring processes will significantly differ and so will be the cost structures. Hence reinvention is unavoidable.
- A system integrator (SI) offers multitude of products and certain services that are related to the IT Infrastructure. There are 9 layers that come into play in a typical IT setup. This may vary from company to company.

    1. Hardware
    2. Middleware
    3. Communications and Networking systems
    4. Operating System
    5. Database
    6. Security systems
    7. Application system
    8. Third-party integrations.
    9. Industry Specific Regulatory Compliances.
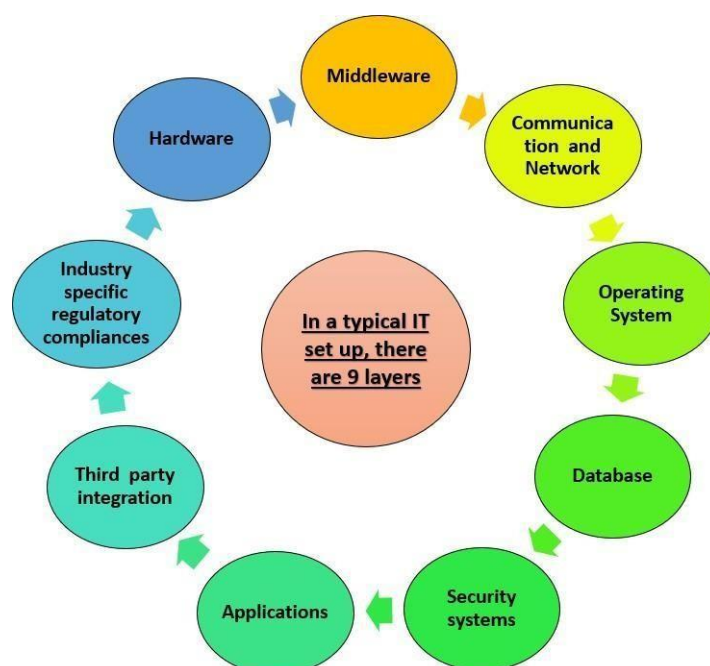
- An organization would require Product, services, and AMC Support for all these areas. Typically, each of these areas is a primary subject of expertise and it may be difficult to find a single company that can offer all these under one roof.

- This is where the window of opportunity lies.

- Traditional SI would normally be dealing in 1, 2, 3, 4, 5 layers from the list above. However, the crucial layers of 6 to 9 are in most demand today and a SI who already has customer access would have huge benefit to add on the 6 to 9 layers to their list of offerings. This will make them play in a field where companies require a single vendor approach or a single neck to choke since all these must be integrated to work.

- If I were a CIO in a Customer products company, I would expect that the vendor I engage is able to provide me products and services in all the above layers with ability to bring in specialist expertise from outside when necessary. This will help me as an CIO to deal with only one vendor for the IT infrastructure setup

- If you see from the 9 layers I mentioned above, a typical SI might already have expertise in layers 1 to 5. So, the following should be done to transform and expand the portfolio of the SI

- Expand the Layers 1 to 5 to incorporate Cloud Technologies. This will provide the SI with capability to provide an SI based offerings for Traditional as well as Cloud based setup.

- Add the Layer of Security System. There is a huge upside that will take place in Cyber security and other Security areas. Companies today require apart from basic anti-virus protections, also required dual authentication, fraud alert systems, stringent security system and VPN setups, payment gateways, security-based audits and gap reports, Malwares and Bot protection etc.

- Add specializations in Industry specific Regulatory Compliances Services. These are now required in many industries, countries as more IT enablement happens in varied businesses. This area is bound to grow and has global potential.

- For layers 7 and 8 which are pure play application based, the DNA of an SI may find it difficult to build these 2 layers. An easier approach will be to buy these 2 layers. There are specialized companies offering Application based services and integration services. Such companies can be identified and brought into the SI frame to complete the offerings.

- None of the above can happen overnight. A very conscious Management Plan needs to be prepared with definitions of objective, rev plan, cost plan, market analysis, your existing customer analysis to identify potential upside. Apart from all these, the identification of a Leader for each of these areas is most crucial. Organizations and Divisions fail not because of lack of business and markets, but because of inefficient leaders. Unless you have a solid leader that you trust, that is committed and has the go getter approach and attitude, success would be difficult to get.

- If you look at any business and ask what the most challenging task in a business is, my answer would be as follows:

- Finding new customers

- Growing the engagement of existing customers.

- If we just overcome the above 2 difficulties, automatically all other difficulties of Cash flow, teams, leaders, etc. will go away.
- As an Existing SI, you already have the leverage of a pool of customers you have been servicing, have built good relations and it would be easier to do item 2 above with them.
- As a start, you should run a survey and ask each of your customer what they would like you to offer them more beyond what are already doing. This will guide towards the right direction where your customer is ready to give you business if you can offer them that layer.

CFO of a NBFC

- Over the last couple of decades, IT services industry have transformed into niche players / skills and services focussed around specific industries. They have started positioning themselves as specific industry partners rather than specific technology partners. While there has been significant movement along these lines, still a lot it yet to be achieved.
- CFOs have started visualising IT as a profit center rather than cost center. With technologies changing so rapidly, CFOs have started moving away from fixed investments to operating costs with SLAs which gives them flexibility and at the same time predictability of service offerings.
- "Change before you change". This acronym is all the more relevant in todays environment. With the speed of technology change and new solutions disrupting the traditional working, every industry needs to transform and NBFCs are no exception.
- The way system integrators had approached consulting and their business in the past needs to undergo a change. Now they need to consider themselves as business partners who can effect the business levers and earn and be a part of the growth journey. They must link their revenue to business KPIs and thereby show that they are willing to put their "skin in the game" and in the process take a larger pie of successful deliverables – and on the contrary, loose if their solutions do not add business value.
- Sis must focus on niche solutions which are industry specific. Everything that they do and invest in should solve a problem for an industry. Product Technology focus is a bygone era. Practically any and everything can be achieved with open source technologies and businesses are no more tied with any technologies.
- All of the above services (Infrastructure Consulting, Database and middleware services, analytics, ERP consulting and implementation, cloud migration and management services) are extremely important for an organisation.. these give the organisation the flexibility to scale on demand in a rational cost effective manner and the analytics drives data based decisions rather than heuristic decisions.

The interviews of industry leaders clearly reveal the following:-

1. Emerging Systems Integrators who have been mainly into product centric business need to transform immediately with specific solutioning strategies , through service transition .
2. There has been constant disruption and innovation in the industry resulting in changing customer preferences and behavior.
3. Transformation cannot happen without certain strategic decisions- these decisions need to be taken depending on factors like industry landscape, current situation of the firm and the future goals of the firm .

Chapter 5

Approach, Design and Methodology

APPROACH, DESIGN & METHODOLOGY

Research Strategy –

1. Understand the changes in customer needs and market opportunities through a) interviews of CXOs across segments like Utilities, Retail, Banking & Finance, Manufacturing, Small & Medium Businesses, Public sector enterprises b) In depth study of consultants' and media reports c) interviews of a group of firms in similar category d) inputs from partners, distributors, and; original equipment manufacturers.

2. Understand the impact of disruptive innovation on the industry and the firm under discussion, from external data and inputs as mentioned in 1) as well as internal information available in the firms.

3. Arrive at a credible picture where the firm is currently, with respect to the available market in the industry and clearly define the goals and objectives of the firm.

4. Utilise a strategic framework to arrive at the new lines of business and skills which can smoothly integrate with the core skills of the firm. It is important to make the transition as smooth as possible, such that to the employees it appears to be an obvious next step towards moving up the value chain.

5. The experiment should involve investment in specific lines of businesses and skills. Using "Value Creation know how" and "Sales Capability" (Worm-Bharadwaj), focus should be on business development in existing and new customer places as well as perfect execution.

6. The experiment should also ensure that core skills are elevated to the next level to enhance value creation in existing and new markets for suitable positioning of the firm. One should constantly increase focus on services and consulting revenues to reduce dependence on product business. The experiment should be conducted for at least 12 months.

7. The identification of the skills and lines of business should be done after in-depth study of available research reports by consultants and corroborated through interviews of relevant stakeholders in the industry ecosystem.

RESEARCH STUDY CONTEXT – IT SERVICES TO BE CONSIDERED

1. Cloud and analytics have become high priority areas of customers. Analytics is being used in some form by most organisations across sectors to improve the business.

2. Another very important area for CIOs, be it in the form of on premise or cloud is the technology platform on which the applications reside. Without a robust and feature rich technology platform business applications will not run successfully and customers' business will suffer. Since Oracle Database remains the global leader with close to 70% market share, and is expected to remain so, Oracle license, consulting, implementation and managed services business as the other key line of business is being selected.

3. A firm with experience in core IT infrastructure can create enhanced customer value by building a consulting practice around infrastructure. The implementation and services skills developed by the firm overtime provides the necessary capability to offer infrastructure consulting services.

TESTING OF HYPOTHESIS – (TECHNIQUE PROPOSED – DIFFERENCE IN DIFFERENCE)

1. The firm under discussion has regional offices all over India. The firm is implementing the transformation journey in some regions where it is building skills around the areas mentioned and driving the business development of such new business areas. In some other regions it is not implementing the transformation and they are allowed to continue with the traditional businesses.

2. After a period of 12 to 18 months, one should have sufficient evidence to corroborate the theory that transformation is an immediate need for emerging IT service companies. The incremental bottom line and top line of the regions undergoing transformation should be good enough to prove the theory, compared to the business results of the regions which did not undergo transformation. Thus one would be in a position to measure the actual outcome of an intervention effected, in this case transformation being the intervention.

3. Thus this work involves moderate prior odds and then corroborating the theory with real life data.

RESEARCH TECHNIQUE CHOSEN I.E. DIFFERENCE IN DIFFERENCE AND WHY IS IT BETTER THAN THE NEXT ALTERNATIVE

Impact Evaluation – Randomized Controlled Trial

1. Impact evaluation is done to determine the causal effect of the **Transformation Program**. To accurately arrive at the effect of the transformation program, one needs a counterfactual or comparison group – what would have happened if the intervention had not happened.

2. Since one cannot observe the counterfactual world, the easiest way to handle this problem is to randomly assign the 'treatment' or intervention to Regions (business entities in this case) and then compare them with the Regions where no treatment has happened. The control group of regions look exactly like the treatment group because of random selection.

3. Even if RCT is the benchmark impact evaluation strategy because one is in control of how the counterfactual group is chosen, there is a still a chance that Randomization was not implemented properly i.e. the implementer might apply treatment to whichever Unit/Region/Geography, they wanted.

IMPACT EVALUATION – DIFFERENCE IN DIFFERENCE –

Randomising treatment by a program is often impossible because it may not be

feasible to withhold treatment or intervention from an entity / unit / Region to have a control. If RCT is not implemented, then we assume that treatment is not randomly assigned – that it depends on either observable or unobservable characteristics of the firm / Region / entity / unit under consideration. In this situation, there are significant differences between our treated and untreated units that we cannot control for in a regression. Leaving these variables out in will cause omitted variable bias, which creates a challenge for estimating causal effect.

DIFFERENCE – IN DIFFERENCE is a method of getting around a non – random assignment of a program.

Example – The research project on transformation of an IT Systems Integration firm to a consulting firm by investing in Service transition. We can measure the impact of transformation by measuring Profitability.

We accept the variables from Worm – Bharadwaj (When & Why do customer solutions pay off in Business Markets) as SALES CAPABILITY & VALUE CREATION KNOWHOW.

Thus the difference – in – difference method applied in my research project in better than the Time Series analysis method.
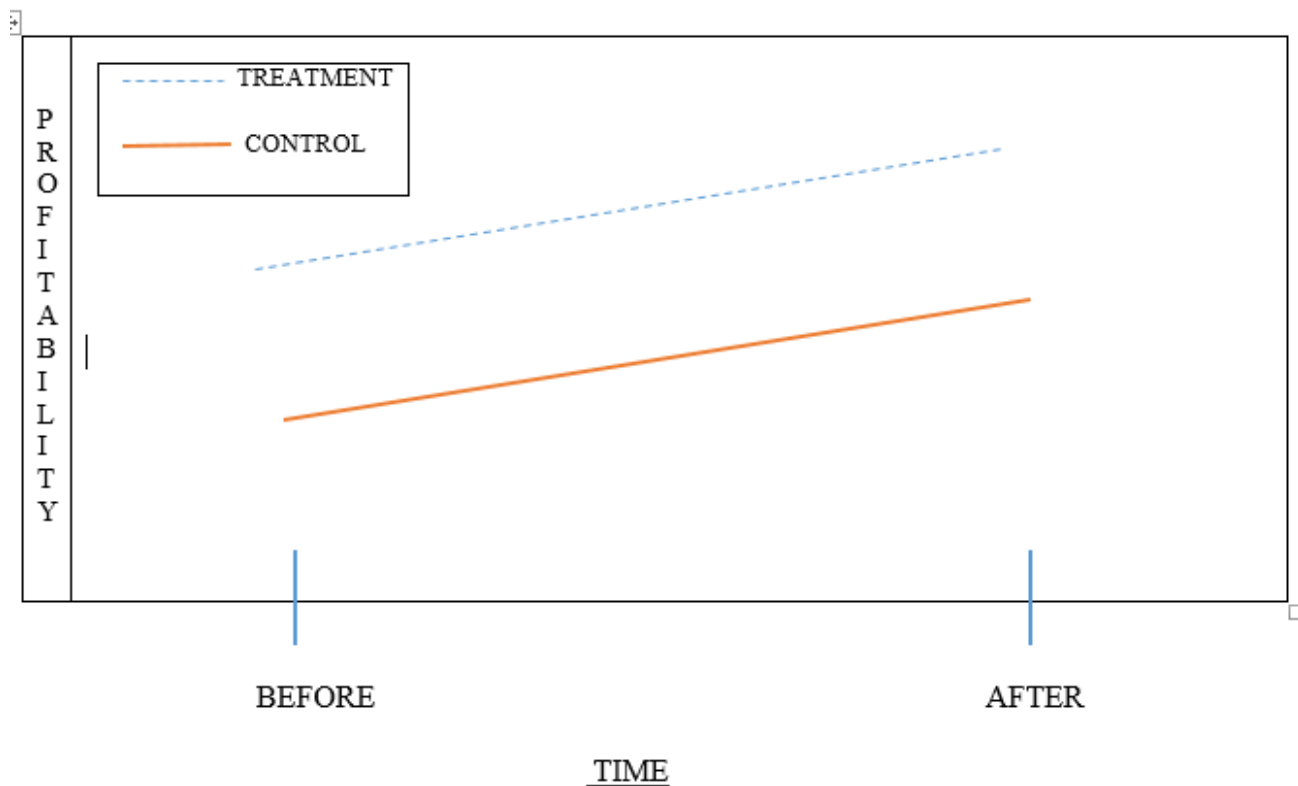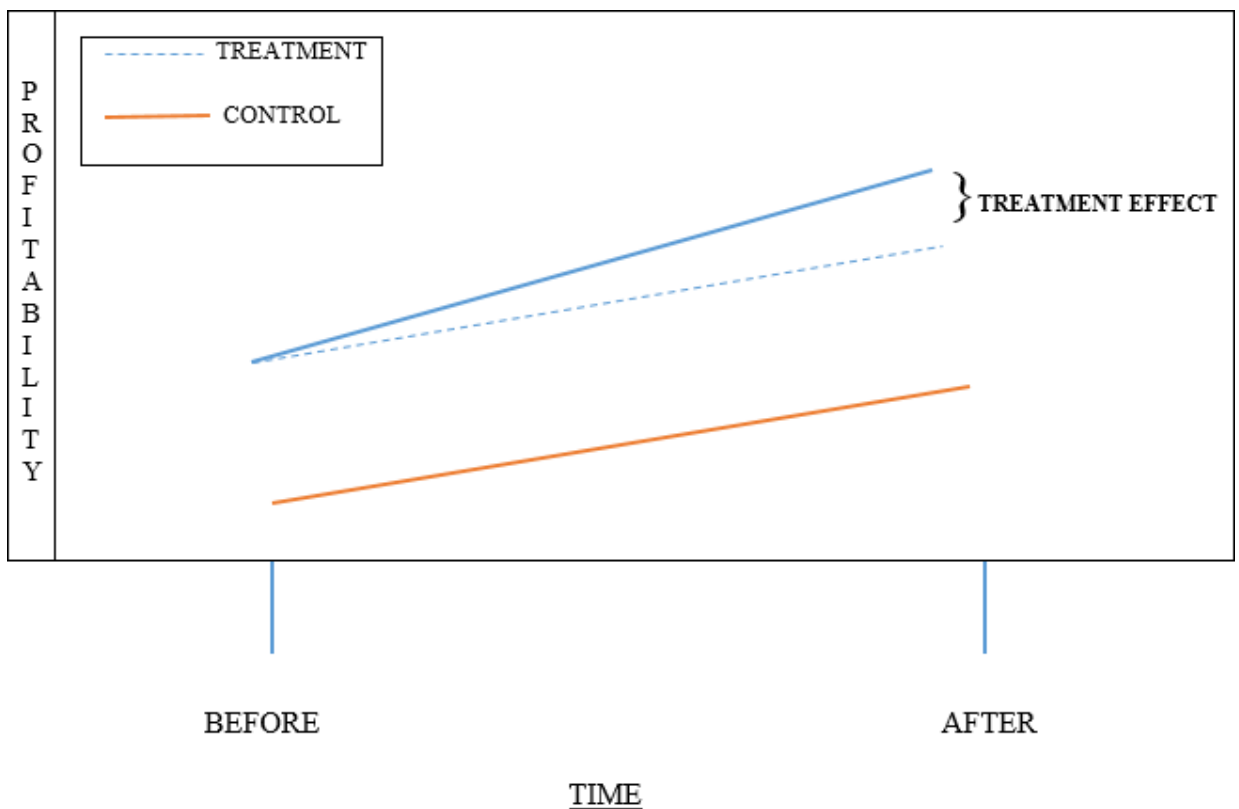
Basically, the difference-in-difference strategy is to conclude that any difference in the slope of these two lines is due to the treatment. (Because we are assuming that the slopes would have been the same without the program/intervention/treatment).

TESTABLE IMPLICATIONS

Establishing that transformation is a need-

1. CXO interviews on industry scenarios
2. Firm Situation- Cash flow pressures, shrinking margins.
3. Research Information on Roadmap and industry trends
4. Changing preferences of the customer – focus on emerging technologies for more cost optimization, productivity enhancement and achieving business goals.

Transformation – Value creation through transformation-

1. Operating cash flow environment is currently volatile, so cash flows have more timing and matching problems. There are significant changes in working capital requirements, investing and financing activities. (This is a major challenge faced by the firm).
2. We need to measure increase in ROS specifically because of the transformational technology solutions introduced. We also need to take stock of the potential negative and positive outcome of the solutions.
3. Risk transferred to the firm, lack of economies of scale, cost inefficiency caused by customers due to non-acceptance of the solution, create negative out comes.
4. Unique skills, demonstration of knowledge and solutions fitment into customer's business goals create positive impact on profitability.

Hence actually need to arrive at the Net Value creation.

Transformation in customer experience creating customer ROI

1. To test this, we need to select a few key differentiating solutions that are

being offered through new initiatives and measure the customers' ROI.

2. It is important to pick up a few business cases in customer organisations, involving the specific services of the firm, to measure the Returns.

INCREASE IN FIRM VALUATION

1. It is important to test change in accounting metrics as ultimately firm valuation is affected by accounting metrics.

2. The firm should be reaching a position to attract the right investors.

How is this research work good qualitative research? An analysis

1. **Using Multiple Sources of Data** – Media reports consultants' reports CXO interviews, interviews with partners/OEMs/distributors, interviews with a small group of similar firms. The central source here is the guiding research question & semi structured interviews.

2. **External Validity** – The model is replicable and can be applied to firms with similar business. Hence this is dependable, and transferable.

3. **Audit Trail** – The results achieved by the firm will appear in the Profit and Loss account, Balance Sheet and Cash flow Statement. Therefore the research is credible, as the data is true and can be interpreted correctly.

4. **Causal Relationship, not only statistical inference** – The results are expected to establish a direct causal relationship between transformation through specific consulting services and upward trends in company performance.

5. **Confirmable** – It can be demonstrated that the views represent the studied group.

REFERENCE

- (SEEKING QUALITATIVE RIGOR IN INDUCTIVE RESEARCH. NOTES ON THE GIOIA METHODOLOGY.
- DENNIS A. GIOIA, KEVIN G. CORLEY AND AIMES I. HAMITON
- ORGANISATION RESEARCH METHOD, SAGE JOURNAL).

Testing Transformation strategies during the Pandemic

1. The Pandemic creates an opportunity to test the strategies further - to test the impact on a emerging IT Systems Integration firm.

2. Empirically this research can assess the degree of success of the transformational strategies deployed in the experiment .

3. Data Analysis and interpretation throws light on the following :-

- Are the specific transformation strategies deployed delivering inspite of the Pandemic ?

- What are the survival strategies of an emerging IT Systems Integrator and do they resonate with the transformation journey ?

- Does the transformation strategy contribute in handling growth, cashflow, profitability ?

- Its an interesting and unique exercise in assessing whether the transformation approach create resilience and enable sustainability even during a global crisis .

Chapter 6
# Theory Testing and Field Experiments

We highlighted a number of research questions which emerged as an outcome of literature review. While theoretical constructs are available in extant literature, it is important to perform theory testing through Field experiments.

The following questions are examined in this research – the rest of the questions arising out of literature review need to be addressed through future research –

1. **Types of solutions to offer, to create a sustainable, predictable, profitable business. How to select appropriate services to move up the value chain, which would deliver under all conditions – structuring the value chain movement.**

2. **Performance impact of solutions at the customer level.**

3. **Conditions under which solutions lead to enhanced financial returns with example.**

4. **Challenges faced while deploying sales capability and value creation knowhow with example.**

5. **How to add intangible elements of service offerings to tangible core products to create an ideal fusion?**

6. **Examine if returns are negative in the short run, while building a solution centric business.**

7. **Strategy to optimise resource hiring and allocation during a transformation journey.**

8. **How to build services from product-based linkages?**

9. **How to build a consulting service, which can cater to multiple customers simultaneously at optimised resource cost?**

10. **Deployment of contingent hierarchy through solutions consulting and measuring the nature of returns in a customer account (From a sales led approach to consulting led approach).**

11. **Strategies to building hybrid offering in the form of a flexible bundle around a particular technology and testing the outcomes of peace of mind and one stop bundles with example.**

12. **Analysing of outcomes by investing in a project as a subcontractor, or consortium partner to established globally renowned firms.**

13. **How can IT system integrators create value and increase market share by integration of hardware, software services and consulting?**

14. **Does presales skills on products enable consulting service sales?**

15. **How does a midsized IT system integrator carve out a market space for itself by adopting elements of a low-cost leader and a differentiator?**

1. **Types of solutions to offer, to create a sustainable, predictable, profitable business.**

Our findings from existing industry literature and reports indicate that emerging traditional system integrators with a strong background in IT infrastructure business need to focus on laying very strong foundations around solutions in order to create, a platform capable of profitable transformation. Building expertise on services around such critical core technology solutions are expected to enable smooth integration with the available skills and eco system as well as create the appropriate platform for smooth service transition towards a productive business model around transformational and emerging technologies. This leads us to create a strategic framework for a emerging IT system integration firm as follows.
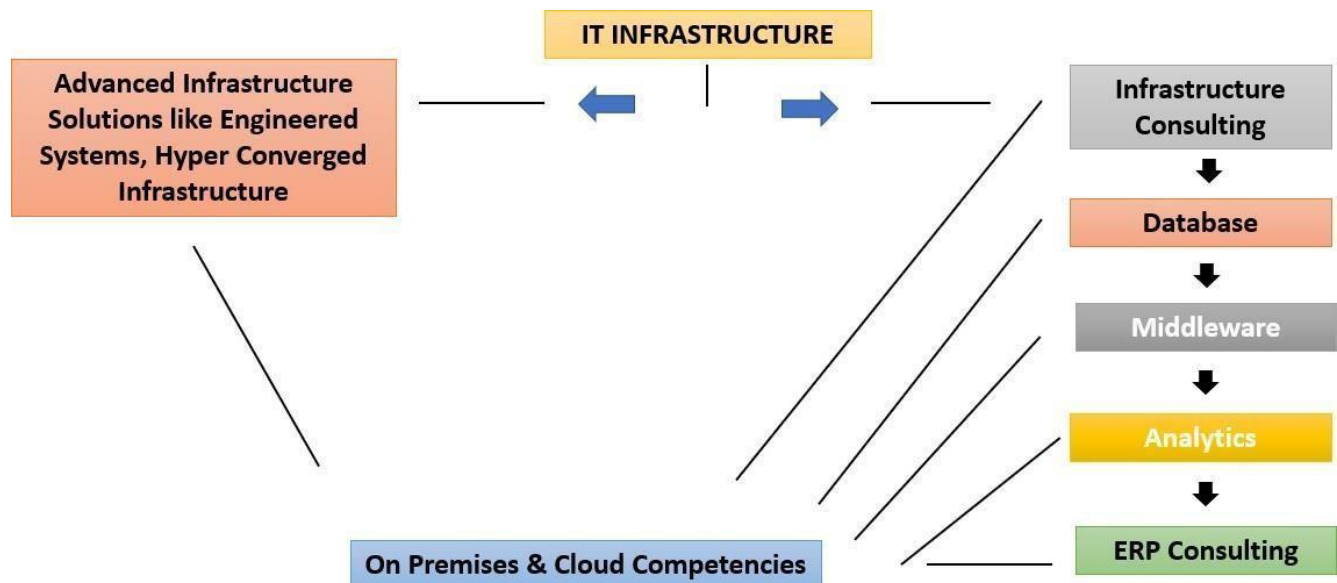
Our research involves an experiment with a mid-sized IT systems integration firm (X) through investment in the above mentioned services.

As observed by Narendra Agarwal, Rajesh Pandit, and Divya Menon in " Strategy to usher in the next phase of growth in the Indian IT industry '' , " Growing up on the value chain implies that a vendor adds input which enhances the quality of output which can be quickly appreciated by a customer and the customer's customers. Services that enable superior business outcomes for customers are considered to be of high value services and customers are willing to pay a premium for such services. Among the available options, three such high end services- consulting, platform based services and business intelligence and analytics are worth discussing.''

For mid sized IT Systems Integrators, who have been working around IT infrastructure business , it therefore makes sense to invest in growing up the value chain through high end services resulting in value creation for the customers. This can happen if a systems integrator builds skills to engage in the entire architecture of the customer, covering infrastructure, platform and then applications. " Platform based services can act as a proxy to product play from Indian IT Services Organisations. " (NM Agrawal et al 2012). The challenges faced by small and medium scale industries are scalability issues, limited delivery of services and product offerings, lack of credible

presence locally and globally, lack of financial aid, lack of market intelligence, lack of resources to invest in developing competencies across multiple verticals, and absence of differentiation in offerings (Aithani 2012). As per NM Agrawal et al, " most of these challenges are due to these firms trying to grow up the value chain by aping the larger IT firms. Despite these challenges, the small and medium IT firms can actually

play an important role in contributing to the overall IT growth by identifying the need for differentiation and focussing on a specialised competency in niche verticals . Instead of adopting multiple expertise across multiple verticals, the need of the hour for these firms is to re evaluate their portfolio and trim it down to select offerings. (Times of India , 2011).

It appears reasonable to cover Services around Infrastructure, Database, middleware and cloud to take care of platforms, analytics and ERP to take care of the most critical of applications in the transformational experiment where a mid sized firm (X)

Invests in such services and the outcomes are analysed.

The above figures provide an understanding on the IT infrastructure Ecosystem and the components that are required to address a firm's IT architecture.
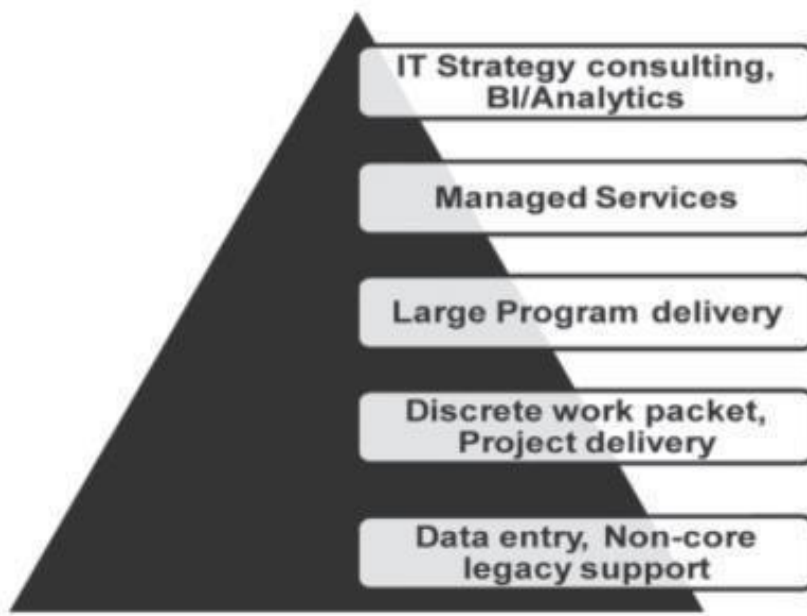
Figure – IT services value Pyramid

Source - Strategy to usher in the next phase of growth in the Indian IT industry by Narendra M. Agrawal, Rajesh Pandit, Divya Menon

- Data takes its rightful place as a platform
- Analytics is driving a discontinuous evolution from BI
- Cloud computing will create more value higher up the stack
- Architecture will shift from server-centric to service centric
- IT security will respond rapidly, progressively—and in proportion
- Data privacy will adopt a risk-based approach
- Social platforms will emerge as a new source of business intelligence
- User experience is what matters

Table - Future Trends of IT Industry

Source - Strategy to usher in the next phase of growth in the Indian IT industry by Narendra M. Agrawal, Rajesh Pandit, Divya Menon

- Analytics
- Too much data, too little measurement and even fewer insights
- Need for constant innovation
- Data security.
- Cloud computing
- Social networks: Enabling a market for Me

Table – Technology trends and opportunities in India

Source - Strategy to usher in the next phase of growth in the Indian IT industry by Narendra M. Agrawal, Rajesh Pandit, Divya Menon.
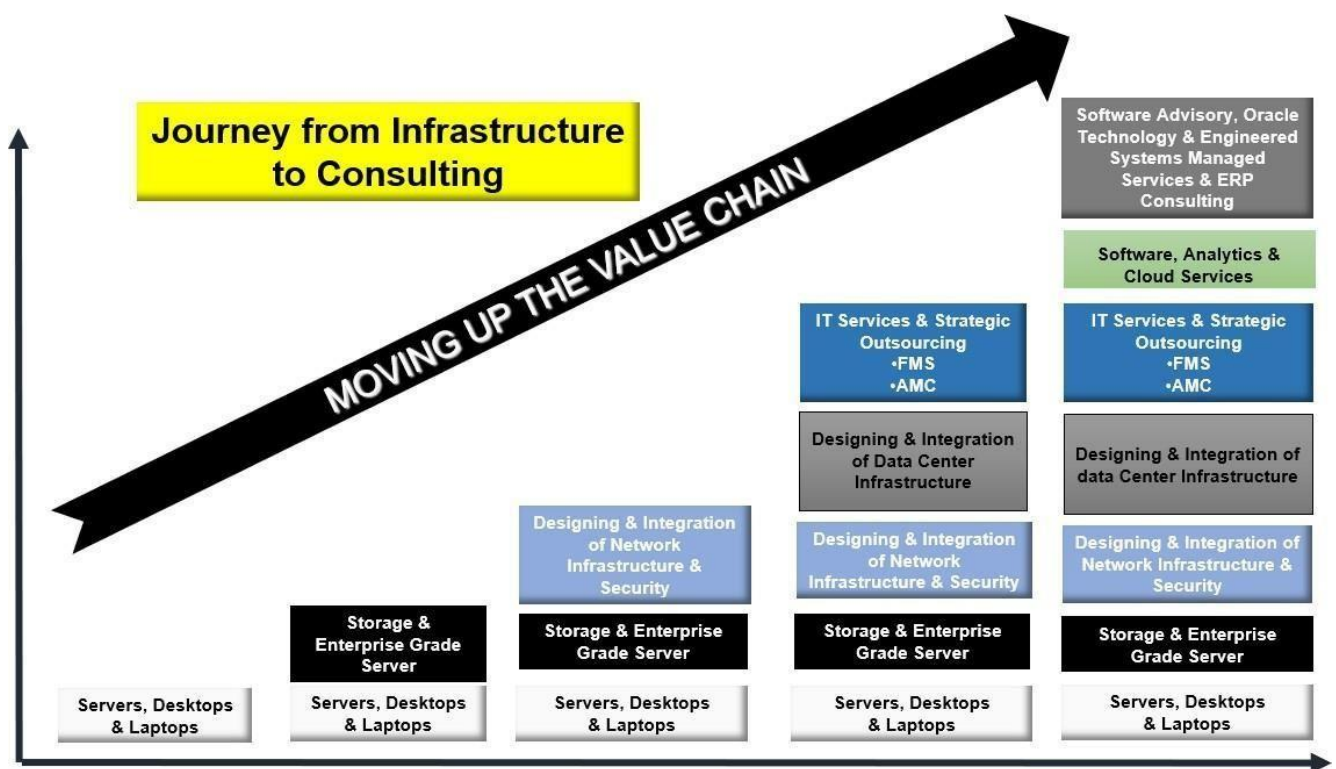
The above figures provide an idea about the technology trends and IT Services value pyramid. The scope of the experiment conducted in this research focuses on the services as shown in the above figure . It is clearly observed that the mid sized firm is investing in order to move up the value chain through Infrastructure Services, Software Advisory, analytics and cloud services and business consulting .

2. Performance Impact of Solutions at Customer level – the case of an electric supply Corporation in a metro

The strategy deployed to build software consulting services in this customer account involved an indepth understanding of the customer's critical problems and addressal of the same by positioning a product of global repute, the Oracle Engineered System, Supercluster . The customer was looking forward to a system which could handle a huge workload of billing and consumer services for 3 million consumers . The systems integration firm X, understanding this requirement early , partnered with Oracle to offer this solution . The reason behind positioning this solution was not only the performance of this system but the fact that this customer had been using Oracle SPARC platform at their datacenter for over a decade and was seriously looking at a superior machine with enhanced capacity and performance as the existing systems were unable to handle the constantly increasing load of billing and consumer services. While any high performance system could have been positioned, the firm (X) realised early that it would be ideal if a system belonging to the same family with extreme performance could be positioned, then the customer would save huge costs and trouble of complex migrations. All the existing software applications and platforms would work smoothly, upgrades would be simple and the Return on Investment would be realised fast.

Once the customer accepted the product, the Systems Integration firm had to sell this system at a very thin margin, attributable to the high product price and limited customer budget. In fact the margin in the product sale was as low as 2

%, but the firm (X)went ahead and completed the transaction with an objective of offering value creating services around this product. The consulting services opportunity came very soon and its here that the firm saw a quick success of the service transition experiment that it was investing in . The Oracle Supercluster system needed perfect implementation, deployment of Oracle Database and technology consulting services to manage the entire hardware and software as it was an extremely complex installation. The firm had started investing in partnerships with Oracle including hiring experienced experts in this domain and could easily respond to this need of the customer . For the customer it was an easy choice - a systems integrator with skills on Oracle Supercluster and Database . Not only one time implementation jobs were awarded to the firm, but also a consulting contract to manage the show, renewable annually , was also awarded . This was followed by a need to upgrade the middleware platform of the customer. That too was on Oracle platform and the firm (X) became the automatic choice. This opportunity was truly transformational in nature as explained below-

Overview And Statement Of Problem/Requirement

POWER UTILITY COMPANY produces and distributes electricity to more 3 million customers in and around Kolkata area. Its customer bases includes both low tension and high tension customers (consumers). POWER UTILITY COMPANY uses a plethora of IT applications to interact with and serve their consumers. These applications address a wide gamut of business processes from enabling a consumer to request for a new connection, tracking the status of application, viewing his usage, payment of bills, grievance redressal, to name a few. Because of the consumer facing nature of these IT application, their service level criticality has been and continues to be of utmost importance to POWER UTILITY COMPANY.

These 'consumer services' applications, historically used to run on more of a monolithic architecture on a legacy application server named 'Glassfish'. This architecture did a little to allow seamless scaling up, which naturally posed an operational problem to POWER UTILITY COMPANY since the scaling up capability wasn't able to keep up with rate of consumer acquisition. This disparity caused an imminent performance issue manifested through increased responsed timed of the applications leading to miffed consumers. At the same time the architecture fell short in ensuring complete availabity of the applications in the event of a hardware failure.

The Assignment And Solution

It was clear that a modernization of the deployment architecture was required. The architecture demanded the ability to scale up without compromising application availability, which the current application server was not able to provide. A robust application server platform, in the form of Oracle Weblogic Server was therefore chosen to replace the existing 'Glassfish' application server. Oracle Weblogic Server, though its much more enhanced features was poised to solve the problems.Once Oracle Weblogic server was chosen as the modernized application deployment platform. Once the product was chosen, two specific challenges needed to be mitigated namely

a) Configure the product in accordance with the prevailing best practices to ensure maximum benefit is extracted from the product features

b) Migrate the 100 odd applications from Glassfish to Oracle Weblogic quickly

Both the above activities were done with success over a 4 month period in time thereby bring about a much better service level of the consumer services applications within a short timeframe.

Benefits Observed

Below are some markedly observable benefits to POWER UTILITY COMPANY due to the above modernization

  I.   Remarkable improvement on the application response times, which made the end users happy

  II. With more and more consumers hitting the applications, the performance did not degrade which ensure that the consumer happily continued to use these applications

  III. As business needed more applications to be deployes, this architecture allowed quick departmental self service kind of deployment as opposed to a more tie takin centralized kind of deployment done earlier thereby reducing the time to market of the new applications remarkably

  IV. Availabilty of the applications improved remarkably

The middleware upgrade created the opportunity of selling the middleware at reasonable margins, but more importantly, the profitability generated in the migration consulting project was much higher in percentage terms than standard systems integration business. Thus this created the realisation in the firm that such consulting projects can generate returns much beyond expectations. The

Revenue	Cost	Percentage Returns
Rs. 2.4 Crores	Rs. 2 Crores	16.66%

nature of investment and returns are shown below:-

The performance impact at the customer account was tremendous and the firm (X) continues to be the lead Systems Integrator and consulting services provider to this Electric Supply Corporation from 2018 till date.

3. Conditions under which solutions lead to enhanced returns, with an example

In an attempt to build consulting and services businesses with significantly higher returns, the firm (X) entered the market of a neighbouring country, Bangladesh . After initial periods of exploration, it was observed that local midsized firms were doing quite well in their product business but lacked consulting and implementation skills to create business value for their customers. Such firms were looking forward to partnering with Indian firms to offer complete solutions to their customers. The firm (X) quickly entered into a partnering arrangement with a local firm, which mandated that firm (X) would not try to sell products in the client base of the local firm but would offer implementation and consulting services to the customers.

Selection of the local firm was governed by factors like product resell rights of the local firm which required a convergence with the skills being built by the firm (X). Since firm (X) was building skills around Database . middleware, analytics , a firm was identified which was successfully selling such products to certain key customers of the Bangladesh market. One of these customers, a large Bank, had

procured software licenses around Database and analytics from the local firm but was yet to derive business value out of such procurement because of the absence of a proposal which would give them the desired price performance ie solution implementation at an affordable cost. This situation perfectly suited firm (X) as it was building practices around these technologies and it took up this opportunity. The project was transformational in nature as described below:-

Overview And Statement Of Problem/Requirement

Bank B , is a mid-sized commercial bank in Dhaka.The Bank used a data warehouse for most of their MIS reporting. While the day to day requirements of the MIS reporting were reasonably met by this system, a few shortcomings were reported by the personnel who were responsible for taking business decision based on these data. The shortcomings were primarily related to timeliness of data, and the availability of the data in a central place. In other words, the existing MIS didn't do enough to curb the data silos. In addition to this historical reports and trend analysis also seemed to be a challenge because the existing architecture didn't handle this well. As the result of this the value of the data was not being realized the Bank.

A requirement of a comprehensive data warehouse therefore emerged, which would

    a. Contain the real time transaction data for facilitating operational reporting

    b. Contain an immutable transaction history for trend analysis and historical reports

  c. Summarized data for high level business

stakeholders## The Assignment And Solution

A solution was built, with a completely modular architecture for creating the data warehouse eschewing the monolith of the existing system. A streaming solution was designed that would stream the transaction data in real time to the operational data store as the transaction take place in the business systems. This layer was then used to serve the operational reporting part. In addition to this database was created containing an immutable transaction history, with all transactions happening in the business system simply getting appended to this. This layer served the purpose of historical reporting and trend analysis, this being a repository of non-volatile historical data.

A third layer was created that contained summarized data primarily for the C-Suite executives. Proper transformation logic were applied to the transactional data in accordance with the business requirements to create this layer. A standard ETL tool was used to accomplish this.

Benefits Observed

  I.   Single source of truth for operational reports, historical and trend analysis and Executive reports.

  II.   Complete elimination of data silos

  III.   Running aound a number of data sources, as was done earlier no longer required. Business users, IT Personnel, C-Suite executives all refer to the same sacrosanct data warehouse for information

  IV.   Facilitated self-service reporting as the data is already organized and present thereby drastically improving the timeliness of information

Revenue	Cost	Percentage Returns
Rs. 54 Lacs	Rs. 27 Lacs	50%

This experiment led to several outcomes-

1. The firm (X) quickly gained huge mindshare in the neighbouring country as a skilled consulting and implementation firm.
2. The successful customer referral could be utilised in the Banking and Finance segment across India and Bangladesh
3. Significant visibility was gained with the OEM as well- the OEM started recognising the skills of firm (X) and started recommending the firm in deployment opportunities
4. The returns were much higher than Systems Integration business- the direction of building software services in the firm (X)as clear. It was accepted that the firm needed to scale up such complex, differentiating projects which would make a difference in the customer place. True transformation was in sight .
5. The margins generated helped in enabling the building blocks of the transformation journey as the firm could hire more skilled consultants without financial stress.
4. Challenges faced while deploying sales capability and value creation knowhow, with example:-

Our experiment involved a focused deployment of sales capability and value creation knowhow- for an emerging firm, it was observed that several challenges arise during a transformation journey . The observations were as follows- While sales capability existed in the firm, the salesforce was predominantly used to meeting their targets through IT Infrastructure product sales and rarely through software licenses sale- the entire sales approach was product centric. Since the business was around OEM hardware, network infrastructure , physical security products and in some cases OEM software (we have mentioned earlier that such firms do not have products developed by them) , the approach was quite similar to trading . Customers also perceived the firm as a reliable systems integrator on infrastructure products but in no way was the firm recognised as a consulting firm or solution centric firm, capable of addressing the business goals of the customer through value addition across the entire architecture of the firm. The firm (X) was recognised as a reliable systems integrator because of its capability of timely delivery, competent installation and support as well as integration within the infrastructure space, but but because of the limitations of not addressing the upper layers of the value chain as depicted above, the customers did not allow margins beyond a point . Additionally, even genuine consulting efforts around IT infrastructure were not rewarded as the perception was that the firm (X)was goods centric. Hence it appeared that the customers felt it was good enough to award the product orders to this firm , while the presales consulting would be available free and the installation- support could be done at negligible prices . Interestingly this is a common problem with most mid sized IT Systems Integration firms, where the OEM products are sold , installed and supported through these SIs but because of the goods centric perception, the margins are much lower than the desired level. The solution to this problem obviously is a solution centric approach

and that's what exactly has been done in our experiment . However as mentioned earlier , the salesforce was used to product sales and changing the mindset as well as transforming the skill level of the salesforce appeared an extremely difficult task. The approach taken was capacity building within the existing sales force on one hand and hiring senior leaders from the OEM consulting and business development community- these senior leaders, because of their time tested experience had an indepth understanding of the markets, customers, solutioning strategies and products . But the task of transforming the sales force appeared extremely challenging, as few could absorb the need for solutioning business and quickly built competencies around it. A significant part of the sales force would positively respond to an opportunity, but could not develop themselves to a level where proactively solutioning business could be positioned to a customer. The second challenge was lack of an established brand name in software solutioning – the firm (X) was reputed in IT infrastructure and had a large customer base, but the existing customers could not easily change their mindset to depend on this firm for software solutioning . These factors led to initial challenges of acquiring solutioning business even from existing customers.

Case of a NBFC organisation –

During the transformation journey, the firm (X) started aggressively bidding for software services projects at installed base customer accounts. In one such account, where the firm (X)as an incumbent in the product space, an opportunity came up for offering managed services and consulting around their existing installed base of Oracle Database and Oracle ERP. Now this was the space, where the firm (X) was building a practice and was definitely resonating with the solutioning goals of the firm. It required rounds of convincing at the CIO levels to even participate in the opportunity- the firm had hired senior leaders from the OEM Ecosystem who had consulting as well as business development experience in Oracle Database . The ERP practice was at its initial stage and hence to strengthen the proposal, the firm (X) formed a consortium with a firm specialising in purely Oracle ERP. The consortium was quite strongly formed with senior leaders from the industry leading the consortium, with vast experience in the OEM ecosystem as well as specialist consultants with similar experience in handling Oracle Database and ERP projects. But competition was from Big Fours and therefore the firm (X) was facing obstacles in qualifying till the final round . However, because of presales consulting skills and sales capability, the firm (X) finally made it to the final round where commercial negotiations followed. As mentioned earlier, because of lack of brand positioning in the software services space, the CIOs insisted that the firm (X) should operate at, at least a 25% price difference with the Big Fours, who obviously had global repute . Since this was an opportunity to break through, the firm (X) decided to aggressively quote and meet the customer expectations on the commercials.

However inspite of technically meeting all requirements and commercially being significantly lower, the firm (X) could not win this contract as the CXOs of the NBFC customer account felt that they would have " peace of mind " if they awarded the contract to one of the Big Fours. They were willing to pay a premium

of 25% to the Big Fours to buy the " peace of mind " as they felt that it would be too much of a risk , awarding a critical service like Database and ERP management to an emerging firm and in case of any outages, they would not be able to justify their decision.

The loss of this opportunity served as a learning for the firm (X), who reworked on their strategy and came back to this NBFC customer with a completely different value proposition, as follows-

The NBFC customer was doing a review of the available software license inventory - to ascertain if adequate software licenses had been procured as required by the hardware landscape, growth in user count and utilisation needs of the business. After internal review and discussion with external consultants , it appeared that a huge license procurement was inevitable. The firm (X) had been building competencies around license management and optimisation techniques , by virtue of which it was feasible to enable customers with the appropriate deployment techniques and policies , thereby leading in significant savings in license procurement cost. The firm (X) submitted a consulting proposal articulating its available skills in license management and optimisation. The customer immediately found value in this proposal, as a thorough analysis of the software inventory as well as future requirements alongwith deployment of correct optimisation techniques would lead to a significant saving . Firm (X) was appointed as the Consultant to advise the NBFC on their license requirements- the outcome was a huge saving in license cost. This unique proposition of firm (X) led to the following-

1) Establishment of credentials as a consulting firm capable of license management and optimisation.
2) The support services of Oracle was awarded to the firm (X).
3) Even the necessary licenses were procured from firm (X).
4) Firm (X) became the one stop shop on software licenses and support in this NBFC account . Nature of Returns in the NBFC account –

One time License	Revenue	Margins
	1 Crore	10 Lacs

Annual support revenue	Revenue	Margins
	1.4 Crores	23 Lacs

5. How to add intangible elements of service offerings to tangible core products to create an ideal fusion?

The case of a Foods Company –

S Foods , an organisation with specialisation in food products, was getting acquired by a large group with multiple businesses like tobacco, hospitality, paper, agri business and foods. During acquisition, as part of standard audit processes, S Foods was instructed to procure additional software licenses in the Database middleware layer as well as the ERP layer. The requirement was reasonably large and the firm who would be selected to fulfil this requirement would also have to

ensure perfect deployment of the licenses as per business usage of S Foods. S Foods was an existing Oracle user and therefore required additional Oracle licenses . Multiple renowned bidders participated in this competition to pick up this project as it meant not only a significant topline and bottomline, but also an assured future revenue in support and consulting services. The firm (X), being an emerging IT Services firm, would not stand any chance unless a clear differentiator was created .

One strategic move taken by the firm (X) in its transformation journey was to either hire or collaborate with outstanding domain experts who were either from the OEM or from Big Fours with extreme competency in domains like Oracle Database and ERP . While competing for the opportunity at S Foods, the firm (X) realised that there were time tested Oracle partners who were competing , and because of their pricing structures, economies of scale, market reputation they would easily be ahead unless a specific customer problem could be identified and addressed. So the approach taken was not license sale at all, but identification of the key problems of the customer.

During discussions with the CXOs of the customer, it emerged that the customer was disturbed about two key issues- one is the volume of licenses proposed and recommended by the OEM. They were seriously trying to optimise the requirement as it involved a huge capital expenditure. Secondly, they needed urgent help in adhering to GST e-invoicing services around their ERP solution. This is where firm (X) could create the differentiator- the Database expert enabled the customer to ethically and legally optimise the licenses and the ERP expert provided guidance in implementing GST e invoicing within desired timelines. Firm (X) also committed this service free of cost to the customer, with a condition that if these services were successfully implemented, then the entire license   and support deal would be awarded to firm (X). Thus, in a situation where the opportunity was purely around products, intangible services were added to the product offering to create unmatched value for the customer.

Outcomes-

1) S Foods awarded the entire license and support contract to firm (X).
2) This also meant recurring revenue in technical support every year, going forward.
3) Firm W established itself at S Foods as their trusted consultant in software solutions
4) S Foods started awarding all other businesses including infrastructure, networking , and other software renewals to Firm (X).
5) Firm (X) was very strongly recommended for a large migration project at the larger company I, which had Oracle ERP in one of their divisions .

Revenue	Cost	Percentage Returns
2.5 Crores	2.1 Crores	16%

6. Examine if the returns are negative in the short run, while building a solution centric business-

The experiment conducted consisted of rolling out select services in 4 Regions in the firm (X), while those services were not rolled out at all in 4 other Regions. Thus an Intervention Group of 4 Regions and a Control Group of 4 Regions were formed. Investments in the form of presales consulting resources, post sales deployment resources and sales efforts related to the specific service lines chosen, joint efforts with concerned OEMs were done in the Intervention Group only . While the " Difference in Difference " technique clearly demonstrated a positive difference in service revenues between the Groups leading us to believe that such transformational services lead to enhanced service revenues in the short run, a profitability analysis reveals that in the short run, profitability decreases even in the Intervention Group which achieved commendable service revenues owing to the transformation. Interestingly enough, after an initial dip in profitability, the Intervention Group experiences significant increase in profitability quickly, in the second year.

Such initial decrease in profitability is not counter intuitive- IT services and consulting business requires significant investment in skills . To position a product centric firm in the market as a consulting and services organisation requires investment in senior leaders in consulting and sales, who in turn hire consultants with differentiating capability . Joint marketing campaigns with OEMs, customer events, increased travel, are additional overheads. In order to close business in domains which might have been dominated by established consulting and services firms, its important to be competitive in commercials also. Initial penetration in services and consulting space demands price-performance. The firm (X) had to make all such investments- at the same time, contracts had to be picked up at extremely competitive prices . Therefore the profitability suffered as is shown in the figure below. However , once the resources settle down in customer accounts, more services business comes in . The interesting aspect of IT services and consulting is, that the same resource can cater to multiple projects. For example, if a resource has been hired to offer expert Database services to one client, the same resource may be able to cater to three clients parallelly. Thus without adding resources, if a skill is selected in such a manner that demand for the skill would continue, more clients as well as more projects in the same client account can be added. This is what pulls up the profitability. Another factor is the flexibility in price which a firm enjoys once a few projects are delivered successfully and some credentials are built. The firm gets into a position to ask for a slight increase in rates, which positively affects profitability. The third factor is acquiring new

projects, once few projects are successfully executed. The increase in profitability in case of firm (X) is shown in the figure below:-

	CITY		1. GROUPWISE DATA – Profitability by Year		
			17-18	18-19	19-20
Control Group	Bangalore		76,11,056.76	-2,59,10,110.40	13,78,344.62
	Bhuvaneshwar		78,60,787.27	-10,29,757.88	-1,21,63,199.28
	Noida		51,42,069.31	8,36,729.28	-11,748.55
	Patna		39,04,685.37	16,54,547.57	-63,74,604.56
		Totals:	2,45,18,598.71	-2,44,48,591.43	-1,71,71,207.77
Intervention Group	Delhi		8,92,764.02	-13,08,320.97	21,41,965.05
	Jamshedpur		1,13,00,191.71	6,14,09,920.10	10,46,15,681.75
	Kolkata		14,16,25,690.15	7,48,63,196.92	14,18,97,309.85
	Mumbai		62,41,285.63	27,58,381.97	-12,62,713.49
		Totals:	16,00,59,931.51	13,77,23,178.02	24,73,92,243.16

2. COMPUTATION OF t-TEST

	CITY		17-18 to 18-19			18-19 to 19-20		
			Absolute Growth	*Sq. Absolute Growth*		*Absolute Growth*	*Sq. Absolute Growth*	
Control Group	Bangalore		-3,35,21,167.16	1,12,36,68,64,77,68,660.00		2,72,88,455.02	74,46,59,77,73,78,563.00	
	Bhuvaneshwar		-88,90,545.15	7,90,41,79,30,64,188.40		-1,11,33,441.40	12,39,53,51,74,07,234.00	
	Noida		-43,05,340.03	1,85,35,95,27,73,920.40		-8,48,477.83	7,19,91,46,28,001.51	
	Patna		-22,50,137.80	50,63,12,01,18,988.83		-80,29,152.13	6,44,67,28,39,26,683.50	
		Means:	-1,22,41,797.54	30,65,77,37,84,31,440.00	Means:	18,19,345.92	23,34,50,12,33,35,121.00	
Intervention Group	Delhi		-22,01,084.99	48,44,77,51,33,203.30		34,50,286.02	1,19,04,47,36,19,807.40	
	Jamshedpur		5,01,09,728.39	2,51,09,84,87,93,19,570.00		4,32,05,761.65	1,86,67,37,83,97,56,610.00	
	Kolkata		-6,67,62,493.23	4,45,72,30,50,22,85,800.00		6,70,34,112.93	4,49,35,72,29,63,12,000.00	
	Mumbai		-34,82,903.66	1,21,30,61,79,04,841.40		-40,21,095.46	1,61,69,20,86,98,432.60	
		Means:	-55,84,188.37	1,74,62,97,69,36,60,850.00	Means:	2,74,17,266.29	1,59,70,95,95,45,96,710.00	

Computation of the Variance:

Variance = (Expectation of Squares) – (Square of the Expectation)

	Years	Expectation of Sq.	Sq. of Expectations	Variance
Control Group	17-18 to 18-19	30,65,77,37,84,31,440.00	14,98,61,60,68,87,932.00	15,67,15,77,15,43,508.00
	18-19 to 19-20	23,34,50,12,33,35,121.00	33,10,01,95,58,427.19	23,01,40,10,37,76,693.00
Intervention Group	17-18 to 18-19	1,74,62,97,69,36,60,850.00	3,11,83,15,97,79,564.20	1,71,51,14,53,38,81,290.00
	18-19 to 19-20	1,59,70,95,95,45,96,710.00	75,17,06,49,05,42,598.00	84,53,89,46,40,54,115.00

t = (Absolute Difference of the Means) / (Square Root of the Mean of the Variances)

Years	Mean of Control Group	Mean of Interv. Group	Variance of Control Group	Variance of Interv. Group	Absolute Diff of Means	Root of Mean Varia	Value of t
17-18 to 18-19	-1,22,41,797.54	-3,35,21,167.16	15,67,15,77,15,43,508.00	1,71,51,14,53,38,81,290.00	2,12,79,369.63	3,05,92,730.39	0.70
18-19 to 19-20	18,19,345.92	2,74,17,266.29	23,01,40,10,37,76,693.00	84,53,89,46,40,54,115.00	2,55,97,920.37	1,75,39,232.60	1.46

(b) Computed by Built-in Function

Years	t-parameter (one-tail)	t-parameter (two-tails)
17-18 to 18-19	0.40	0.80
18-19 to 19-20	0.12	0.24

3. DIFFERENCE IN DIFFERENCE COMPUTATION USING GRAPHS

Year	Control Group	Intervention Group
17-18	2,45,18,598.71	16,00,59,931.51
18-19	-2,44,48,591.43	13,77,23,178.02
19-20	-1,71,71,207.77	24,73,92,243.16

Difference in Difference
Plot of Profitability vs Fiscal Year
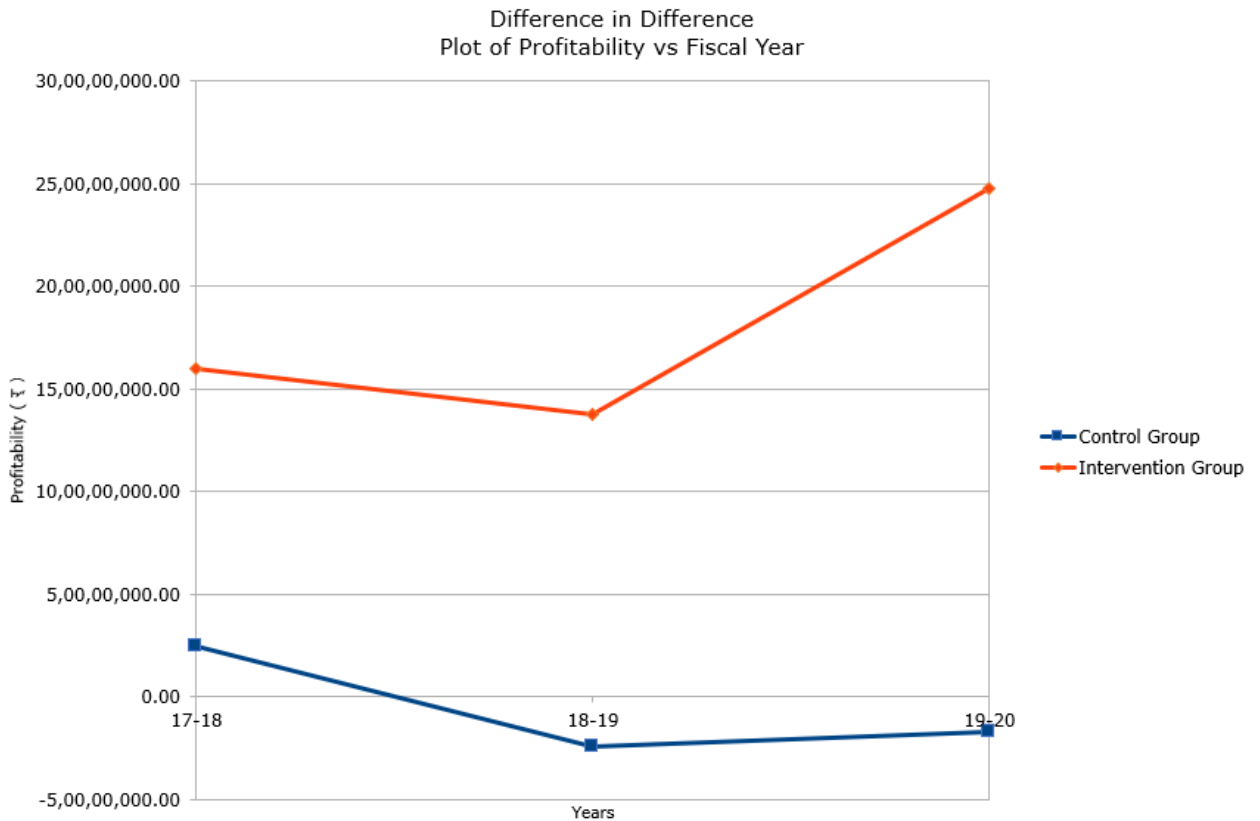
Year			
17-18 to 18-19	-2,23,36,753.49	-4,89,67,190.14	2,66,30,436.65
18-19 to 19-20	10,96,69,065.14	72,77,383.66	10,23,91,681.48

7.Strategy to optimise resource hiring and allocation during a transformation journey-

The journey of creating a consulting organisation from an infrastructure focused organisation involves deployment of value creating services in customer accounts and building consulting credentials . Once certain differentiated value creating services are rolled out in a number of customer accounts, the consulting business can be scaled up by planned investments in " sales capability and value creation knowhow ". However its important to realise that such consulting services can be rolled out only by establishing the capability of creating value to decision makers. This requires real demonstration of skills in certain domains, which requires expert resources .

But even if we are clear about the need of a certain service, demand potential of that service in the industry, can we simply hire some expert resources in a domain and expect customers to award consulting business ? The factors which makes penetration difficult include presence of competing large players with reputed brand names, resistance within the customer account to depend on mid sized players without a consulting background, cost of hiring best of resources and retaining such resources- therefore the technique applied in the firm (X) was, penetration into consulting space through products.

In the case of the Electric Supply Corporation mentioned above, the firm (X), while partnering with the OEM for the opportunity, started by hiring an expert Consulting leader from the OEM ecosystem. The Engineered System, a state of the art product was positioned jointly with the OEM to drastically improve billing and consumer services. It has been mentioned above that the margin for the firm (X) was negligible. However such an advanced system obviously required impeccable implementation and then regular consulting services for operations. Integration of hardware and software successfully and utilising such integration to meet the business goals of the customer was key. By positioning services around the product, Oracle Supercluster, through a senior expert resource hired from the OEM, the firm ensured the implementation contract . This required convincing the customer about the capability of delivering a complex service , which was possible because of the hiring of the senior expert resource and the resultant recommendation from the OEM as well . One aspect which mid sized firms need to keep in mind is, that there needs to be a clear plan to cover the costs of the resources even before the resources are hired. Otherwise there is a significant risk of hiring without productivity and the model becomes impossible to sustain, in no time

. Hence there needs to be a clear plan of achieving certain service goals before hiring resources and once the resources are on board, those services projects have to be in . In this case, the implementation of the Supercluster system led to the middleware project as described above. The margins generated in the middleware project took care of a major component of the cost of the senior resource. Once that was done, the firm (X) started positioning managed consulting services for best utilisation of the product.

The customer did not want to risk such a critical investment and therefore , once the firm (X) completed the middleware project successfully, the customer initiated a managed services contract. Its important to note here that till now the senior expert consulting leader was managing the show- the moment the opportunity of managed services came up, the firm (X) realised the potential of this contract. The managed services would continue for the useful life of the product ie about 5 to 7 years. This would generate a monthly revenue , purely from consulting services, for 60 to 84 months - thus predictable and sustainable. This was the right time to hire a mid level resource with expertise in the particular domain and ensure that the services project generates adequate margins after covering the annual cost of the resource completely .

Nature of returns in the managed services project-

Annual revenue for one service	Cost of resource hired and miscellaneous overheads like conveyance, communication charges
18 lacs	7 lacs.

Its important to note the percentage returns in this case- this creates a room for hiring a junior resource as well, who could be trained and deployed in the project. Thus two resources are affordable in one managed services project . Cost of junior entry level resource- 3 lacs . Therefore , in a service worth 18 lacs, cost of two resources is 10 lacs. Its also important to note that negotiating the services price is equally critical- the price needs to be such that the customer does not move away to large branded players and at the same time should generate sufficient margins. The next step was to ensure that the junior resource is trained adequately to take care of the service, under the guidance of the mid level resource , the consulting leader only intervening during escalations. This created the opportunity to allocate the mid level resource to another project . The advantage of IT services projects lie in the fact that physical presence is not always necessary for solving customer problems. A hybrid model of remote services and need based physical presence needs to be sold to the customer, such that resources can be allocated to other projects parallely as long as the resource has the capability to handle them. Thus the strategy that emerged from this case can be summarised as follows-

1) identification of a need for a product based on transformational technology , which can enable a customer to achieve his / her business goals .
2) Partnering with the product OEM early (before other Systems Integrators) for supply, installation, commissioning and support .
3) Hiring an expert from the same OEM with outstanding skills in the particular technology domain .
4) Implementing the product successfully and positioning related software products

5) **Positioning services around the entire product range, including implementation and managed services .**

6) **Closing the hiring process of mid level resource/ resources by the time the service contracts mature- the revenue needs to be at least double of the cost of the resource .**

7) **Once the services are in control, hiring junior talented resource/ resources and training such resource/ resources to take over.**

8) **Deployment of the mid level resource to other projects , which Senior sales people alongwith the consulting leader needs to close. Closures of consulting projects may be faster in installed base account of the Systems Integrator .**

9) **Keeping an eye on covering the cost of the Senior Consulting leader through multiple product/ services contracts such that as more and more projects come, resources can be added to build a practice. For this, the org should not feel any pressure in retaining the senior consulting leader/ leaders , as they would be expensive.**

10) **While hiring skilled resources are critical for building a practice, which is mandatory for a consulting organisation, its extremely important to ensure a clear pipeline of revenues even before the resources are on board . Otherwise, hiring resources without projects might lead to erosion of working capital, which is anyways scarce for mid sized IT Systems Integration companies .**

8.How to build Services from product based linkages ?

It has been discussed earlier how difficult it is to position a new consulting service without credentials, even to an installed base customer. The firm (X) therefore tried out a strategy of building services from product based linkages . Utilising the expertise of senior consulting leaders, hired from an OEM ecosystem, the firm created an edge in positioning certain products in a customer account where the OEM felt there was a need to regularise software licenses, as the usage was increasing with progression of time and both the customer and the OEM felt the need to complete the license inventory .

Case of a Battery Company E:-

A renowned battery company , running Database, middleware and ERP came up with a requirement of additional software licenses across these products. The volumes required were huge and going by standard discounts, the deal would have become unaffordable. This is where the firm (X) found an opportunity to create value for the customer as well as the OEM. The customer needed to regularise the license requirements in order to achieve compliance and the OEM needed to close the deal within certain timelines. But the sheer volume and hence the price was making the deal unviable. Also there were a number of IT Services firms interested in doing this project - so a clear differentiator was required to enable the customer select the right partner. The firm (X) tried an innovative strategy by offering License Optimisation services, which simply educated the customer about certain ethical techniques

to maximise usage with an optimal inventory of licenses- obviously the OEM had to approve of this. This License optimisation technique reduced the overall expenditure from 5 million $ to 2 million $!! The customer was impressed and immediately obtained necessary approvals from the Board to release the software license order to firm (X). The OEM also approved of the license type and quantity as well as the commercials as the techniques were implemented absolutely as per the OEM Licensing Policy . This approach completely differentiated firm (X) from its competitors , who were playing purely on pushing the products at certain prices . The following license revenue and profitability was achieved by applying the above mentioned strategy of license optimisation .

Software License Revenue- 10.5 Crores

Profitability – 1 crore

The firm (X) utilised this opportunity to position cloud services alongwith on premise software to enable the customer on cloud technologies. As part of the ERP software stack, Cloud Sourcing solution was positioned . Thus this opened up an avenue of creating credentials around emerging technologies for the firm . This is an example in our experiment where a firm utilises competency in management and optimisation of on premise software licenses in enabling a customer to achieve cloud transition. Its worthwhile to mention here that firms with existing competencies in IT infrastructure can achieve cloud competencies with relative ease as the underlying technologies are well understood. Therefore IT infrastructure firms need to quickly pick up cloud competencies and transform in order to meet the needs of the changing marketplace. On completion and fulfilment of the product order, the firm (X) started studying the complete enterprise IT architecture of the customer. Having supplied and installed a huge software license set, the firm had to be present in order to provide support. This created opportunities to interact with the customer across all levels including the CXO levels , as deployment and support of the software licenses was critical for the customer and frequent reviews were conducted .

Key findings-

1. The customer was getting the managed services on the Database and middleware done by an organisation of global repute – hence paying huge fees.
2. The customer needed a refresh of the infrastructure at their main Datacenter .
3. They were also paying a significantly high support fees to the same large organisation , to support their existing software stack, procured earlier.
4. While they had implemented ERP, certain applications like Advanced Supply Chain Management needed upgradation, which needed

specialised skills. This particular skill was not available with firm (X), while the above three opportunities could be attempted.

5. The Disaster Recovery site was incomplete and had to be set up , either through Infrastructure or cloud.

Having satisfied the customer by successfully deploying the software licenses , the firm continued regular interaction, to build relationships and establish the competencies available in offering managed services , infrastructure consulting, and software support.

The customer offered an opportunity to compete in the managed services space, which the firm grabbed by virtue of technical value creation and also price competitiveness. Thus by creating a differentiator in skills and by managing resource costs better, the firm (X) picked up the managed services contract, which was till now executed by a globally renowned IT services organisation. The revenue and profitability structure for this project is as follows-

Annual revenue	Resource cost	Profitability
22 lacs	12 lacs	Over 45 %.

The firm continued intense engagement with the customer in a planned manner. The coverage was done as follows

1. Consulting Head regularly interacting with the technical team and CIO.
2. Account manager covering the decision makers through weekly meetings
3. CEO covering the CXOs through monthly meetings.

Customer coverage coupled with excellent service created the next opportunity on Infrastructure refresh . The firm (X) already had existing competencies in infrastructure implementation and support. Therefore this was an easy decision for the customer . Thus the firm (X) also picked up the entire infrastructure refresh project , which earlier was with another Systems Integrator of global repute.

Infrastructure project revenue and profits-

Revenue	Cost	Profitability
1.5 crore	1.3 crore	Over 13 %.

While margins were limited to 13 % , it was critical to pick up this project to continuously create value in the customer's entire IT landscape- infrastructure and platform. This was expected to enable getting into the application landscape , going forward.

Having acquired the software license and infrastructure refresh project, the firm (X) started working on the software support requirements of the customer. Here also the same skills on Database , middleware helped in building credibility in the customer place- the customer was paying huge support fees to the same global giant who was the incumbent. The firm (X) continued to position competency in software support as well as cost efficiency . The customer realised that without compromising on the competency, a much

better cost efficiency could be achieved. Again, through sales capability and value creation knowhow, the firm (X) won the software support contract worth 3 crores. The margins were not high but this gave the firm a complete opportunity to manage the support of the entire software inventory of the customer. The insights derived from this support contract created a clear visibility on upgrade requirements, migration requirements from on premise to cloud, application support as well as application upgrades . The margins in this support contract are low, but such support contracts have immense strategic importance , as we shall discuss in one of the sections later. Also such support contracts are renewable every year and contribute significantly towards creating predictable business models.

Revenue in Software support contract	Cost of OEM support (Annual Technical services)	Margin
3 crores	2.86 crores.	4.6 %.

The firm next started probing into upgrade requirements in the application layer and creating a stable DR. It offered a free analysis and study to the customer , covering technology upgrade , application upgrade needs and Cost Benefit analysis. Since the firm (X) had been building cloud competencies, it could position a DR Cloud based on the solution from the existing OEM successfully. Parallely it highlighted the need for upgradation of Advanced Supply Chain solution , especially since the Battery manufacturing industry needed supply chain automation mandatorily. With in house competencies , the firm (X) received the cloud contract for establishing a DR solution, thus creating an important credential for the firm. It started with a 25 lacs per annum contract , but this was annuity business and opened up opportunities of high margin cloud services in future.

But the firm (X) did not have any competency in Advanced Supply Chain management solution. Building competency would take time and investments with unpredictable returns.

Such a situation meant either dropping the opportunity or collaborating with a firm competent in implementing such solutions. Collaboration appeared to be the most feasible solution .

The firm (X) started looking for a firm expertise in the domain but with limited market reach, sales capability and lean enough for agile execution. After discussions with multiple firms, a local firm led by an ex Big Four Leader in Oracle Applications was identified. This firm was lean , launched as recently as 2017, and had already completed a few complex Oracle ERP implementations . The founder had 25 years of ERP Consulting experience and had a dynamic resource hiring and deployment model - since the brand name was yet to be established, this firm offered cost effective solutions. The firm (X) collaborated with this firm (Q) , and offered a comprehensive solution of Database upgrade and Advanced Supply chain management upgrade to battery company E. The differentiator with competitors were created by virtue of the following factors-

1. Credibility in the market of the Ex Big Four leader with whom the collaboration was done.
2. Competency of the Technology Consulting leader of the firm (X).
3. Intense account management at all levels by the Sales team .
4. Excellent performance in all ongoing projects .
5. Competitive pricing .
6. CXO level connect with the customer.

The firm (X) won the contract for upgradation of Database and Advanced SCM also.The revenue and cost structure was as follows-

Revenue	Cost of internal resource	Cost of outsourcing	Margin
16 lacs	4 lacs	8 lacs	25 %

Though the deal value is only 16 lacs, the following points need to be noted-
1. Successful implementation would create a very strong referral for firm (X) in an extremely niche domain- nationally and internationally , Advanced SCM automation is in serious demand.
2. The application implementation and upgrade business, if scaled up , would actually complete the transformation process from Infrastructure to business consulting.

As the implementation is Work-In -progress, the firm (X) proposed deployment of Oracle Analytics cloud- this was a domain where the firm had already built competence . Since the entire landscape now was in finger tips, including infrastructure, software platforms, applications, data, support models , it was reasonably simple to propose an analytics solution which would create value in generating more returns for the customer.

Thus the firm reached a position to propose and deploy emerging technologies like analytics on cloud, starting from software license business- a clear case of building services from product based linkages .

9.How to build a consulting service, which can cater to multiple customers simultaneously at optimised resource cost?

It is evident from literature review as well as our experience that a consulting business is dependent on how an organisation grooms, retains and utilises skilled resources. The key to achieving returns in a consulting business appears to be using presales consulting and sales skills to pick up profitable projects, and continue to pick up similar projects , thereby building a consulting team who can simultaneously handle such projects requiring the same skill. The business becomes sustainable and predictable once such services projects can be converted to multi year contracts, either at the inception stage or anytime before expiry of the initial annual contract period. In this case, such an approach was tried out- the findings are interesting and point towards a strategy of selecting services, which allow such optimal allocation of skilled resources.

As this experiment involves transition from Infrastructure to consulting, with focus on services around Infrastructure, platform and applications, it is important to select services which would be constantly in demand (implying that the customer just would not be able to do without them), and replicating such services across customers, regions and geographies. At the same time, it is important to engage consultants in services which are related and supports skill building .

a. Infrastructure expertise, systems software, virtualisation and cloud - The firm (X) picked up some existing consultants, skilled in infrastructure and rapidly trained them in cloud technologies . Since the fundamentals of on premise computing were known to them , it became simpler to get them certified in technologies like AWS and Oracle cloud. This enabled them to engage in implementation, migration and managed services in multiple customer accounts parallely . One point which needs to be noted here, is that firms who would try to serially build resources and engage them serially , in projects may get hit on profitability and cashflow right from the beginning .

b. Platform expertise- The decision to build expertise as well as business around platform, at this firm (X) was based on factors like Relatedness to infrastructure (as discussed during literature review) and Predictable demand in the industry for platform centric services and products like Database and Middleware. To ensure investment protection, the Database with largest market share consistently (globally)

was selected - this does not guarantee success but helps in mitigating risk of failure.

Once the decision was taken to go ahead with Oracle Database, the firm started selling the Oracle Database and related software and systems to existing customers.

Existing customers of the firm (X) , who already had experience of infrastructure supplied, installed and supported by the firm offered opportunities to the firm relatively quickly to deploy Database and middleware products. This led to implementation, migration and managed consulting services around the Database and middleware. To cater to this need the firm had to hire consultants with skills in such domains . Since these domains were anyways in high demand, the firm started using the first couple of services projects as referrals and positioned exactly the same service in more and more customer accounts . Within a year, the same team was catering to specialised Database- Middleware services to customers across segments like Utilities, Battery manufacturing, Automobile manufacturing, Aluminium industry, Steel , and Banking & Financial Services , covering multiple regions in India and Bangladesh .

. The cost of building different services right from the beginning of the transformation would have implied hiring of resources with diverse skills without a clear business forecast. Many transformations fail as

leaders start aggressive expensive hiring across domains without a visibility of business , leading to huge initial costs and eroding profit margins. The approach taken here has been as follows-

1. Based on recommendations and gaps in literature review, industry literature , views of industry leaders and Demand of certain solutions, selection of a product and services pillar, related to the Core business of the firm .

2. Hire a consulting leader, with time tested experience and domain knowledge.

3. Target existing customers to position such solutions. Once the product is sold, focus on implementation, migration, consulting and support around the product.

4. Enable the leader to hire resources with basic skills around this domain . Arrange for intensive training to build expertise of such resources.

5. Create a formidable team to offer extremely efficient services to the customer and quickly take a recommendation from the customer.

6. Position services in the same domain to at least 5 more installed base customers- incremental cost of execution would be low.

7. Expand these services to new customer accounts and new geographies .

c. Applying the above- mentioned strategy, the firm (X) started positioning software products at a leading Utility firm . The product contract led to implementation, managed consulting services and support contracts – the skills developed and hired to manage this customer account enabled the firm W to expand into the following customer accounts- NBFC , Battery company , Aluminium Company , Department of Finance State Govt , Steel company , Engineering firm , Software development company , Paper Mills , Car manufacturer , Mobile phone company , Private Banks Bangladesh, Denmark based IT Services firm. During this experiment, the focus was on building a small consulting team first with the capability of catering to multiple customers spread across several geographical regions; and then expanding the team as per needs of the business. Its important to note that such services, onsite and remote, may not be feasible with any kind of services- also it may not be possible to build a set of skills which harmoniously mingle with each other and enable a firm to serve diverse customers- it is here that understanding the market, changing customer preferences and relatedness of software solutions , make a difference. In our experiment we have tried with Database-middleware, cloud , analytics and ERP - the results show a clear positive trend towards profitability, growth , predictability and sustainability .

10. Deployment of Contingent hierarchy through Solutions consulting and measuring the rate of returns in a customer account . (From Sales led to Consulting led)

Firms with a background of infrastructure products , without a brand recognition in consulting services face a serious challenge in achieving customer confidence while trying out business development of consulting services . The sales initiatives are therefore perceived as product pushing drives and therefore carries little value for the customers. While the customers may still be impressed with sales capability, but they look for a partner who would enable them achieve their business goals- hence articulation of the value proposition becomes vital. As part of our experiment, we tried to penetrate a neighbouring market , Bangladesh. After initial market research our observation was that this market was flooded with globally renowned software products . We narrowed down to the spaces where the practices we were building would fit in . To our pleasant surprise, there were large installed bases of Oracle Database, middleware, Engineered systems, analytics but with little deployment or implementation progress. This implied that locally available skills were not adequate to create value for the customers, although the customers might have procured the products right for their business. The firm (X) tied up with a product centric firm Z who were suppliers of Oracle products to large private sector Banks. But Z did not possess the consulting skills to implement these products and were looking for an emerging consulting partner who would be able to implement these solutions at affordable rates. Once this collaboration was in place, lot of interesting opportunities were visible in the consulting space. However the CXOs of the Banks were not interested in sales led conversations as they wanted to understand in depth , how the products they had procured could be deployed successfully - otherwise their huge investments could not be justified. Hence the firm (X) ensured that the conversation, presentations and proposals were led by a consulting leader with experience of over two decades in a private Bank at Dhaka, D Bank.

D Bank had large investments made, in Oracle Database security products. Given the critical nature of security requirements in the Banking business, Database security was a must to have. But the CXOs were not really finding the right blend of competency and price. It is here that the firm (X) could convince the customer account by virtue of a consulting led business development approach . Once the consulting leader completed the business development exercise, the sales leader was introduced to negotiate the commercials . Thus this was a clear example of contingent hierarchy .

D Bank Database security implementation-

Revenue	Total cost including resources, boarding lodging and allowances	Margins
30 lacs.	15 lacs	15 lacs (50%)

Once the effectiveness of contingent hierarchy was realised, the firm (X) tried the same strategy in multiple accounts with a very high success rate. Thus it appears important for mid sized IT Systems Integrators aspiring to transform into consulting organisations, to select services which are in high and consistent demand and invest in senior time tested consulting leaders to lead the business development of specialised consulting services in select customer accounts.

11. Strategies to build flexible bundle around a technology and testing outcomes of peace of mind and one stop bundles –

We refer to the literature review on flexible bundles, peace of mind bundles and one stop bundles.

(A Practical Guide to Combining Products and Services - Venkatesh Shankar, Leonard L Berry and Thomas Dotzel)

This experiment provides the opportunity to test such bundles and measure the outcomes.

Literature mentions the creation of flexible bundles around Oracle technologies- Combining complex products and services, to achieve business outcomes for the customer, is key. While such products and services can be promoted independently, they are also complementary . Oracle solutions create such opportunities for systems integrators, which is evident in this experiment as well. We refer to the case of the Electric Supply Corporation mentioned above . if we carefully consider the products and services positioned, the first step was to position an Oracle Engineered System to transform the billing and consumer services functions of the customer, two critical pillars of the business . Interestingly, if the infrastructure is from Oracle, the quantity of software licenses also gets optimised and leads to considerable savings in the customer investments. So for the firm (X), it became easier to resell the Oracle Database licenses as a clear value proposition emerged , called Oracle -On- Oracle, thereby making the software deal competitive. Once that was done, firm (X) positioned Oracle middleware to enhance efficiency of the existing business applications of the customer , which was till now running on a traditional middleware, reaching end of life. While this was a separate Oracle product and positioned independently, it served as a complementary solution to the hardware and database. The point to be noted , is that while these products are independent of each other ie the middleware and database can be different and not necessarily from Oracle , the maximum benefits to the customer can be delivered if the IT landscape has infrastructure, Database and middleware from Oracle . In terms of cost efficiency, operational efficiency, ease of support, application deployment - the customer realises maximum value. On completion of installation of these products, the firm (X) started positioning migration and consulting services to integrate , migrate the existing applications and then smooth maintenance of the entire solution. This involved offering complex , differentiated services and required high level of expertise . These services generated a high return for the firm (X). Thus a bundle was created with Infrastructure, Database, middleware, migration services,

consulting services – the journey started with very low margins on infrastructure and led to enhanced margins on services. It is interesting to note that the decision to hire a senior consulting leader from the OEM actually paid off - the migration and consulting services could have been provided by the OEM themselves . The firm (X) had to display extreme competency in presales consulting and keep the commercials attractive in order to ensure customer preference. However, Peace of Mind bundles behave differently for Systems Integrators- in order to ensure Peace of Mind for the customers, OEMs provide " Annual Technical Support " which is a proprietary service from the OEMs. A systems integrator, by virtue of partnership can do Support Renewal business but the margins usually are very low. ATS business gives visibility to a systems integrator, helps to generate early leads for products and services business, creates a competitive edge over other competitors and if done in volumes spread over multiple customers, generates topline and bottomline by virtue of economies of scale - but since the support is system driven and directly from OEMs, there is little scope for value addition from the Systems Integrator .

Similarly, any service provided by the OEMs directly generates very little returns for the Partner or Systems Integration organisations. For the customers, the peace of mind bundles provide an assurance that the best has been done from their end to ensure premium services and expert consulting services, but Systems Integrators need to add specialised value creating services to Peace of Mind bundles to generate profitability . Otherwise, it may make sense to let Peace of Mind bundles/ business happen directly – however this is not an easy decision to make. OEMs look forward to Partners to handle the transactional elements of the business because of their stringent credit policies and inability to furnish Bank Guarantees- hence for them its convenient if a Partner takes care of these issues at a thin transaction margin . For a Systems Integrator with objectives of transformation, its very important to utilise such opportunities to negotiate with the OEMs and agree to do Peace of Mind bundles, and enhance product and consulting services business, in return.

The firm (X) tried Peace of Mind bundle with OEM Annual Technical Support in a number of customer accounts with a Global IT Servcies Organisation I, the volume of business was large , but since there was no value added services , the margins were very low.

Customer I:-

Annual Technical Services Revenue in the year 19-20	Transfer price of OEM	Gross Margin
14 crores.	13.77 crores.	23 lacs (less than 2 %).

However, in another customer account, additional services were bundled with OEM Annual Technical Support . The firm (X) identified an opportunity at a Railway Catering Company, R and bundled additional consulting services. Through sales capability , the firm (X) could convince the customer to evaluate Systems Integrators on the basis of competency in OEM Consulting services and select one Partner exclusively . Utilising its consulting competency, the firm (X) was selected as an exclusive Partner of customer R, to provide OEM services as well as non OEM services. In this case the returns were significantly higher.

Railway catering company R-

Services Revenue fora 3-year contract (2019-22)-	Cost of OEM ATS and services	Gross Margin
7.5 crores	6 crores	1.5 crores i.e. 20%

Thus Peace of Mind bundles , if combined with differentiating services, can generate returns for a systems integrator .

One Stop bundles –

One stop bundles can provide opportunities to a Systems Integrator to address multiple product and service lines to the same customer , thereby enhancing revenues , growth and profitability. However if not managed carefully, this may create serious problems for the Systems Integrator and the customer. For example, its not necessary that a computer hardware Systems integrator would be able to provide installation and services for all ranges of computer hardware- a firm specialising in desktop / laptop computing may not have any idea about Server/ Storage . At times, out of over enthusiasm firms take up projects, outside their competency domains with the hope that such projects can be handled and end up creating disasters. However, once a firm has built competencies around certain pillars of hardware / networks/ software / services , it can take up a strategy of picking up a few customer accounts with major expansion plans and IT budgets and concentrate on these customer accounts , again through sales capability and value creation knowhow .

The firm (X), in its transformation experiment, picked up a couple of customer accounts where it was already doing infrastructure and network business. The objective was to position software licenses, software support and consulting services in addition to the existing infrastructure and network business. Selection of such customer segments and accounts is critical, as they need to have the desired needs and buying potential . Hence a new Bank, which had received Banking license less than 5 years back and was an existing customer was picked up (Bank N) and a globally renowned steel giant ST , who was also an existing customer was selected to attempt a One Stop Bundle .

The Bank N and Steel Company ST had already invested in infrastructure and had huge potential in the Domains of Database, Middleware, Financial Analytics, Software support and consulting services. Such companies could

afford Oracle solutions and since the firm (X) had invested in Oracle , it was decided to position Oracle solutions strongly . In such competitive accounts, in order to penetrate new verticals, extreme competency is necessary. Hence the investment made in competency building paid off here as well- the only advantage was the existing relationship firm (X) had with these customers. Such relationships created opportunities to approach the customer with Oracle solutions- again , inspite of severe competition from differentiators and low cost leaders, the firm (X) could penetrate with its hybrid offering and extreme presales and deployment skills .

The outcomes proved to be truly beneficial for firm (X)- The Bank decided to procure Oracle Database, infrastructure and ERP solutions from firm (X). With this incremental business , this customer emerged to be the largest customer of firm (X), with a contribution of about 16% to total firm revenues. The installed base now covers advanced Servers and storage solutions, Networking solutions for the Bank, laptops and devices for Branches , Physical security solutions like CCTVs at Branch level, UPS systems for Branches, Network Security solutions, Systems software, virtualisation software, Hyper Converged Infrastructure, Database software, Middleware software, ERP software, Core Banking and Non Core Banking infrastructure. Thus the firm (X) now caters to a major part of the IT requirements , from devices to ERP software .

Similarly the firm (X) had a strong installed base at the Steel Company ST - mainly around IT infrastructure (Servers and Storage), Networking solutions, Physical Security solutions (CCTVs , Access control)- during the transformation experiment the firm (X) attempted Strategic Outsourcing, Database and middleware solutions, Software consulting services, Annual Technical Support for the entire Database and Middleware . In most of these initiatives, the outcomes were positive - strategic outsourcing covered services for the entire infrastructure and platform of the Steel company , adding a services revenue of 10 crores each year since 2018 . (18-19, 19-20 and 20-21). The Annual Technical support on Oracle platform added about 6 crores of revenue per year . The Database and middleware licenses and software consulting services started adding 3-4 crores on an average. Thus this is another case of successful implementation of One Stop Bundle , the products and services ranging from hardware to infrastructure and platform consulting . This customer has now emerged as one of the top 3 customers for firm (X), with a contribution of about 12 % to the total revenues.This experiment on One Stop bundle throws light on the strategies that actually can make one stop bundles successful. Firstly, intense engagement with existing customers and creation of customer delight on the installed base products and services. Secondly, planning the transformation in a manner that enables a Systems Integration firm to move up the value chain alongwith the growing needs of the customer. This clearly points towards investment in competencies that are related to the installed base and can seamlessly integrate with the current or past activities of a firm. While emerging

technologies can be lucrative apparently, its important to realise that if an infrastructure SI suddenly takes up Artificial Intelligence / Machine learning / Internet of Things/ Blockchain solutions without focussing on building competencies at the foundation level, the salesforce may get lost and customers may not accept the new initiatives of a firm. It appears that a strategy to build very strong foundations around platform and then applications is ideal for an IT Infrastructure SI. Once the transformation is successfully done and the business around platform and applications scale up to an extent, then one can focus on how technologies like AI/ ML create value in platform and applications . This can be an interesting domain for future research .

12. Analysis of outcomes through subcontracting or consortium formation –

Mid sized IT Systems Integration firms who are trying to transform seriously face challenges in scaling up, for multiple reasons. These include non availability of credentials in certain specialised domains, limited resources and limited reach- unless a firm is able to scale, returns would not be visible even if transformational solution practices are built .

This experiment draws motivation from the literature <u>(Catching up or leap frogging in the Indian IT Service Sector : Windows of opportunity, path creating and moving up the value chain - By Keun Lee, Tae Young Park and Rishikesha. T. Krishnan)</u> on how Firms like TCS, Infosys , Wipro had scaled up by becoming subcontractors to globally renowned organisations. The IT landscape and requirements were different during the growth phases of TCS, Infosys and Wipro but such firms are capable today to pick up large contracts requiring multiple solutions to be implemented and integrated. The cost of outsourcing elements of such projects might be lower than inhouse execution, for such large global firms. Hence for a Systems Integration firm like (X), it is important to search for opportunities where, a large firm picks up a contract which requires skills which the firm (X) is building, such that at least a part of a project can be subcontracted to the firm (X). To address such opportunities, the firm (X) needed to convince some large firms of the skills and competencies available and qualify as a subcontractor .

Such a search was conducted and an opportunity identified with a globally renowned IT Services Giant . This organisation needed to implement Commercial Taxes Application in an Indian State - it had an existing time tested Commercial Taxes Application. However the State Government required that the organisation would have to take up the entire responsibility of deployment and support of the infrastructure , platform and application. While the project appeared profitable for the IT Services Giant, this organisation did not have resources in that state for infrastructure and platform. They only had resources to implement and support the application, as this product was developed by them. So they needed a Systems Integrator who had competencies around Servers and Storage, Network, Operating Systems, Database and middleware . Also they wanted to subcontract a hybrid bundle ie services as well as products , to reduce their procurement liability and

optimise cost of procurement .Firm (X), having specialised in infrastructure consulting, network services, Systems software, Database and middleware was perfectly positioned to take up this subcontracted project. It is here that the combination of products and services proved to be a perfect fit . Firm (X) was awarded this project - the goods and services breakup was as follows:-

Total Product Value	Hardware and Software	Resources' cost for deployment services	Margins
7 crores	5.5 crores	0.2 crores	1.3 crores

This project led to an opportunity of " Operations and Maintenance " for 2 years . This was purely a services opportunity with higher margins . Since the project became dependent on firm (X), the firm could command higher profits .

Operations and Maintenance-

Project value for first year	Project value for second year	Resource cost for 1st year	Resource cost for 2nd year	Margins
65 lacs	65lacs+Inflationary Index factored uplift @ 6 %= 68.9 lacs.	40 lacs.	44 lacs.	49.9 lacs = 37.26%

The practice of taking up subcontracted projects opened up multiple avenues of business-

1. Created a strong customer referral for other State Government projects.
2. Since the lead bidder firm was a global giant in IT services, this opened up opportunities for firm (X) to grow with this firm as it would be possible to pick up other projects from them.
3. The OEM relationships created in such a critical project enabled more and more leads from such OEMs , thus expanding the services and product pipeline .

The case of a Consortium:-

The transformation of Systems Integrators into solutioning also opens up opportunities to participate in large projects, by formation of consortiums which otherwise would have been impossible. In large Public Sector projects dependent on Specialised Applications, the Application provider, in most situations does not possess skills around Infrastructure, connectivity and platform . However customers prefer a single window solution and do not intend to hold multiple parties responsible for project implementation. The firm (X), having built Infrastructure and platform skills for a couple of years required a project to scale up the business. Such an opportunity valued at close to 100 crores was spotted through one of the Big Four Consulting organisations. A public sector utility company needed to implement a specialised application software , which was developed and maintained by one of the Big Fours , say B4 . This firm B4 was purely into management and Application consulting but hardly had any idea about the Infrastructure and platform required to deploy specialised application in the customer account . Without a strong consortium partner with relevant skills, it was impossible for B4 to bid for a turnkey project like this. Similarly, the firm (X) did not have any application software in the Power/ utility domain and hence participation was ruled out without a partnership. It is here that we realise the value of availability of complementary skills- A Big Four with deep expertise in a

Revenue achieved from the project	Cost of goods and resources	Approx. Margins
44 crores	Approx.40 crores	4 crores.

specialised utility software and an emerging Systems Integrator with deep expertise in implementation and management of Servers- Storage, Network and security equipment, Systems Software, Virtualisation, Database and middleware.

In fact without a planned deliberate transformation journey the firm (X) would not have been accepted by a Big Four as a consortium partner and the end customer also would not have accepted firm (X) as one of the solution providers.

Thus this project generated nearly 15 % of the firm W's total revenues during the year 20-21. The benefits which such projects bring include the following-

1. Significant scaling up of the Systems Integration business , products as well as services.
2. A successful execution leads to multiple projects in the Big Four space as well as creates credentials for collaborating with other global giants and entering large projects .
3. Creates credentials in a specific domain in public sector space- in this case power / utility segment .
4. For multi year projects like this, an assured services revenue can be predicted for years to come . The fundamental goal of solutioning and service transition is to achieve a predictable sustainable situation for the firm. Such projects contribute significantly towards achieving this goal.

Thus we observe that for a mid sized IT Systems Integrator , one clear

growth opportunity lies in working as a subcontractor or a consortium partner to large firms with global presence. However the choice of solutions remain a critical success factor, as there has to be a convergence and complementarity of competencies between the lead bidder and the consortium partner .

13. How can IT Systems Integrators create value and increase market share :-

One approach of increasing market share can be selectively identifying some high potential customer accounts and engaging in the growth journey of the customer through the services most needed to achieve the desired growth. Identification of such high potential accounts is important and it is critical for a firm to do an industry analysis and identify the potential customers who would certainly need to invest in IT products and services in the near future.

As part of this experiment, the firm (X) identified a new Bank which was in its early growth phase and was an existing customer on infrastructure. The firm had been offering IT infrastructure and networking products and services to the Bank for a few years before starting this experiment . While planning the transformation from infrastructure to consulting, the following points were realised and noted-

1. The customer being a new Bank was rapidly expanding through multiple lines of business as well as increased presence in multiple regions all over the country . This created the need for IT Infrastructure and networking requirements across branch offices, regional offices , zonal offices and headquarters. Additionally physical security and surveillance requirements kept increasing. The firm (X) was already catering to supply, installation and support of the IT Infrastructure, networking and security requirements of the Bank.

2. There was a need for a competent systems integrator who would also be able to create value in the platform and application layers of the Bank, which were critical for its business. There were multiple applications like Asset Liability Management, Internet banking, Treasuries, Loan Management , Anti money Laundering to name a few and also the need for a robust Core Banking software to run the Core business.

3. It was possible to take the opportunity of incumbency in the infrastructure layer and contribute in building the platform and also contribute to an extent in enabling the customer on Core Banking Software , even though the Core Banking Software would be a proprietary product with vey few niche players in the market . Thus there was a need to effectively contribute in building the platform for surround applications as well as implement application products which would work harmoniously with the Core Banking solution.

On the basis of the above-mentioned observations, the firm (X) started propagating the Database-middleware technology where it had built adequate competency right from the beginning of the transformation journey. Earlier it has been explained why selection of a particular

solution is absolutely critical for a successful transformation - based on market demand, customer preferences and existing market share, Oracle Database and middleware was selected by the firm (X) as a growth engine. It proved extremely relevant and effective in the Banking domain as most of the established Core Banking Softwares were developed on Oracle platform. In this particular case, since the Bank was evaluating a robust Core Banking Solution, the platform had to be selected too. Not only Core Banking, a number of surround applications were also built on Oracle. Therefore the Bank genuinely needed a consulting organisation to configure, size, optimise , create accurate Bill of Materials and come up with a ROI document which would ensure price performance and protect the investment. This is where firm (X) was allowed to participate - the relationships created by virtue of infrastructure installed base truly paid off in creating such opportunities. After a thorough evaluation, the platform was decided in favour of firm (X) - deployment of the Database and middleware layers for the applications. Along with the platform, came an Infrastructure Consulting opportunity- because of the combination of existing infrastructure skills and new platform skills, the firm (X) was ready for infrastructure consulting opportunities around this particular platform ie Oracle. The customer needed a fresh infrastructure for Non Core Banking applications as well as Core Banking – an infrastructure which would run best in both the environments at optimum cost and minimum downtime . Infrastructure consulting expertise was necessary as , sizing the correct infrastructure, configuring, understanding compatibility with the applications and hence designing the appropriate configuration, even ensuring that the license requirement was the least in the selected infrastructure were essential elements. Firm (X) , by virtue of its transformational initiatives was properly positioned to address this opportunity.

The entire Infrastructure Consulting, product installation and support contract was awarded to Firm (X).

Similarly the Bank needed applications like ERP to work with the Core Banking Solution. The firm (X) had been building an ERP practice (please refer to the value chain diagram) which led to functional consulting expertise around Oracle ERP. ERP modules like Order management, Procurement, Financial Management and Property management had to be implemented and integrated with the Database, middleware and Core Banking . While such complex integration had to be done by the OEM themselves, there was lot of space for a Systems Integrator to do installation, integration and Program management. Firm (X) , by virtue of its skills around Oracle Database platform and functional skills around Oracle ERP , qualified for the ERP contract and was finally awarded the ERP contract.

Thus the market share of the firm (X) in this Bank grew from 30 crores

to 45 crores . This additional 15 crores was expected to grow every year as the Bank would further expand ; more of specialised infrastructure, Database, Middleware, ERP would be required every year. In addition to new business, additional support and manpower services revenue would be inevitably required. What is important to note here, is that a Systems Integrator was doing about 30 crores of revenue in an installed base customer account with traditional infrastructure products. When this Systems Integrator experimented with service transition, selecting the solutioning pillars related to its original product business and building consulting expertise around such pillars, namely platform and applications, it could expand the revenue to 45 crores in no time and created potential to increase market share every year at a significant rate.

One needs to keep in mind that transforming arbitrarily by picking up any technology might not yield results and might even lead to degrowth . To increase market share profitably, it is critical to build expertise around the solutions which a customer or set of customers would need, going forward, with a high degree of certainty . As a customer's business needs evolve , systems integrators need to align the transformational investments with the customers' roadmap.

14. Does Presales skills on Products enable Consulting Services Sales-

As explained earlier, as part of the transformation experiment, the firm (X) invested in technology and product specific presales skills. First the technologies were selected - in the domains of platform and applications, namely Database, middleware, analytics, ERP and cloud . Next the OEM was selected around which the services would be tried out. To create and expand service linkages at existing and new customer accounts, focus was increased on positioning products belonging to the above-mentioned technologies. Once these products were positioned, inevitably successful deployment and support became key, as the customers needed to generate business value from such products. The Presales team expanded its horizons to implementation and support- accordingly necessary resources were hired. This started building implementation skills around specific products like Database Security, Solutions for elimination of single point of failure for mission critical applications and prevention of data loss/ downtime, Disaster Recovery solutions, Replication of Data between heterogeneous platforms. Thus this enabled practice building around these technologies.

To put these skills to test, the firm (X) competed in two Banks in a neighbouring country. The identification of opportunities in these two private sector Banks was done through a local partner organisation who had supplied these products to these Banks .

Private Sector Bank D- This Bank had procured Database Security products and were actively looking for an implementation partner. The customer relationship was being managed by the local partner who was purely

promoting products, but did not have the necessary skills to implement. The customer was looking for an affordable, flexible partner with deep competencies around Database security. The firm (X) qualified and again, by virtue of sales capability and value creation knowhow, won the project. The project was completed satisfactorily in 6 months. The firm (X) would not have been considered for this implementation project if the initiative on Presales had not been taken. It is evident that Presales skills around a certain product generates the necessary exposure on implementation, updates , upgrades, patches , possible troubleshooting requirements as well as success stories in similar industry sectors.

Revenues earned in Database Security project at Bank D	Total cost of resources for 6 months	Gross Margin
34 Lacs	17 Lacs	17 Lacs (50%)

The second attempt was made in another private sector Bank E through the same local partner. This customer account was looking for a consulting organisation who would help them in optimising their infrastructure and platform requirements, without compromising on the business goals. It has been mentioned earlier that IT Infrastructure companies, instead of looking at expansion only through hardware sales, can profitably transform if they seriously utilise their infrastructure knowledge in consulting assignments. In addition to Infrastructure skills, if skills are built around relevant platforms, this combination can be formidable . This is the combination that had been built at firm (X). This customer needed to significantly reduce their IT Budgets- at the same time, to deploy multiple Banking applications, was looking for refresh of entire infrastructure, network and Platform software ie Database and middleware. Typically in such situations, customers tend to go by published sizing documents to arrive at the desired configurations, quantities of hardware , network equipment and Database products. While sizing documents provide accurate information, the actual requirements are case-specific and depend on multiple factors like nature of the application, number of users, infrastructure needs of each application, desired transaction processing speed, future expansion plans and scalability, flexibility of upgrades, compatibility with existing IT landscape , to name a few. Therefore without in depth competency around infrastructure and platforms are mandatorily required to understand each customer situation. In addition to understanding the customer landscape and customer's goals, knowledge around optimization is equally important to reduce the IT spending significantly. The opportunity under discussion demanded all these skills - firm (X) had anyways built such skills and perfectly fitted into the customer needs . The assignment was purely consulting and advisory in nature without any product supply or installation. It took 3-4 months to complete the study and submit an advisory document to the customer. Thus the feasibility of

transforming   midsized IT infrastructure companies to consulting was tested successfully in the case of this private sector Bank E.

Infrastructure Consulting Revenue	Cost of resources including travel and other expenses	Gross margin
17 lacs.	9 lacs.	8 lacs i.e. 47% approximately

15.How does a mid sized IT Systems Integrator carve out a space for itself by adopting elements of a low cost leader and a differentiator-

For a mid sized IT Systems integrator, there are multiple challenges which have been observed- on one hand, the problems faced in expanding a goods centric business and on the other, lack of acceptance in the market in the consulting space. For example, in the IT Services space, with the presence of the Big Fours as well as global leaders in consulting, is it possible for a firm to penetrate into the market within a short span of time, given the fact that the firm has been mainly supplying , installing and supporting infrastructure products? This experiment has explored specific strategies which enable a firm to achieve market penetration in the consulting space in a couple of years.

Selection of consulting domains remain a critical success factor - alongwith software product sales, deep expertise had to be built around a few key solution areas like Database implementation and migration, migration to new middleware platforms, application migration and Database- middleware upgrades. Without such expertise, it is not possible to differentiate oneself from other product centric Systems Integrators . If the expertise level can be of the same level as the OEM themselves, then customers do give an opportunity to emerging systems integrators, considering the cost factor . In this experiment, the firm (X), having built migration skills kept hunting for a complex migration opportunity which would be differentiating in nature and would appear difficult for other emerging Systems Integrators. Such an opportunity was found in one of the largest industry groups. The customer needed to migrate existing applications to a modernised middleware platform, for which large branded consulting organisations including the OEM Consulting organisation were invited . It has been mentioned earlier that firm (X) deliberately hired consulting leaders from the OEM ecosystem to match the competency levels of the OEMs. So it could compete on equal footing with the globally reputed competitors in terms of technical competency. Such a project required intense presales engagement and sales capability. Additionally, the firm (X) had identified this opportunity in an installed base customer TB- hence the relationships in the customer account was already existing. A project of this nature cannot be won on low cost- the complexity required expert resource mobilisation and a long term commitment to complete the migration. Thus the firm (X) realised that it had to deliver at the level of

the OEM, but intelligently work out project costing such that it could do the pricing at a level which would be significantly lower than the pricing levels of the OEM or Big Fours or equivalent, but adequately higher than the cost such that margins were protected.

Finally the firm (X) won the contract at a price 20% lower than the pricing levels of the OEM/ Big Fours, but could protect margins by negotiating resource cost.

The revenue and cost structure was as follows-

Revenue generated from customer TB migration project	Resource cost including travel and other overheads	Gross margin
15 lacs.	9 lacs	6 lacs = 40%

Thus the strategy adopted here was-

1. Developing skills around some platform migration which inevitably had a demand. Hiring leaders from the OEM ecosystem with deep product knowledge.
2. Positioning these skills in installed base customers.
3. Technically competing with large consulting organisations/ OEM/ Big Fours .
4. Commercially pitching the price at approximately 20 % lower .
5. Managing resource cost to make the project profitable.

Pricing the services above low cost leaders and slightly below differentiators, therefore emerged as a winning strategy .

Chapter 7

Data Interpretation, analysis and Results

Overview and Experiment Setup

- **The research objective here is to evaluate if the effect of the strategic interventions carried out by the organization in specific locations (branches) really improves the services revenue of those branches in a way which can be deemed as statistically significant, while compared to the other branches of the organization, wherein no such strategic interventions were done.**

- **In order to test this causality, a quasi-experimental research design is undertaken, wherein there is an intervention group, in the form of a sample of 4 branches wherein the strategic intervention actions, to increase the service revenue, were performed. The service revenue data was collected for each of the 12 months of a year for all the 4 branches, making the sample size 48. There is also a control group in the form of the branches wherein no strategic interventions were performed to increase the service revenue. Since the sample of the 4 branches chosen to perform interventions were not random, and were based on certain factors , the design of this experiment naturally becomes quasi experimental.**

- **This experiment begins with a NULL hypothesis (Ho) in the form of the statement "The strategic interventions had no effect on the service revenue".**

- **An alternative hypothesis (Ha) in the form of the statement "The strategic intervention increases the services revenue significantly" is also drawn parallelly.**

Right tail T- test - Since this experiment's alternative hypothesis is A2 > A1 (we are testing for the largeness of the service revenue), therefore it is natural that we are trying to find where our sample falls in the t-distribution towards the positive side of the distribution, and hence right tailed.

Condition for NULL hypothesis rejection - t-statistic of the given sample (4 branches with 12 data points for each of the branches) > t-value of the t-distribution at 5% significance level and given degrees of freedom (48) which also translates to p value < 5% .

Explanation - Post intervention T-test between intervention group and the control group on the variable "service revenue" was done. The test was performed at a significance level of 5%, using excel data analysis features. The software will calculate the t-value at a confidence level of 95% (1-significance level) at the given degrees of freedom of the sample presented.

The above principle is applied for 4 consecutive years 17-18, 18-19, 19-20, 20-21 to reach the conclusion.

If the t-statistic of the sample is GREATER than the t-value at 95% confidence level and at the given degrees of freedom, then naturally the sample behaviour is clearly NOT representative of the assumed population behaviour (NULL hypothesis) and the data falls in in the rejection range of the hypothesis because t-statistic > t-value at 5% significance level will naturally imply p-value < 0.05, and thereby rejecting the null hypothesis.

If the t-statistic < t-value, then p-value >= 0.05 and in that case the null hypothesis cannot be rejected which means that no impact of the intervention could be observed - .
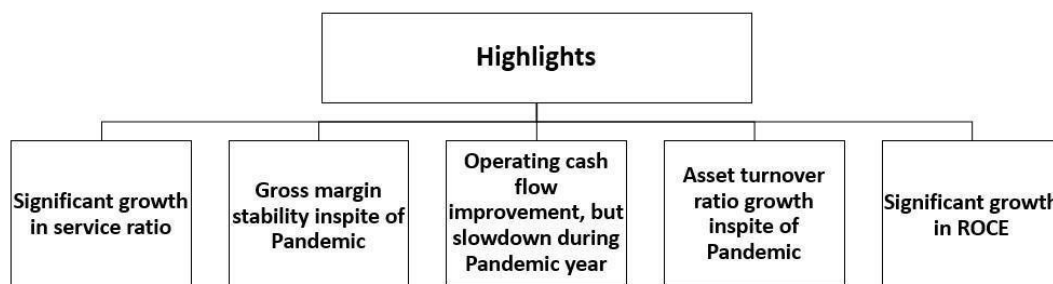
Worksheet.xlsx (Please refer to the 9 Excel sheets.)

Note- Locations 1,2,3,4 are Intervention Regions and form the Intervention Group. Locations 5,6,7 ,8 are Control Regions and form the Control Group.

Behaviour of accounting metrics with respect to Service ratio during the service transition Field experiment :-

Services growth and accounting metrics -

Key Ratios	18-19	19-20	20-21
ROCE	0.162801641	0.320715795	0.26
Asset Turnover Ratio	1.58653076	2.127127978	1.80885975
Gross Margin Ratio	0.175482901	0.17766124	0.168900172
Operating Cash Flow Ratio	0.176545996	0.252991343	0.149714257
Service Ratio	0.304374977	0.367203822	0.489456075

```
                        ┌──────────────┐
                        │  Highlights  │
                        └──────┬───────┘
   ┌────────────┬─────────────┼─────────────┬─────────────┐
┌──────────┐┌──────────┐┌──────────────┐┌──────────┐┌──────────┐
│Significant││Gross     ││Operating cash││Asset     ││Significant│
│growth in ││margin    ││flow          ││turnover  ││growth in │
│service   ││stability ││improvement,  ││ratio     ││ROCE      │
│ratio     ││inspite of││but slowdown  ││growth    ││          │
│          ││Pandemic  ││during        ││inspite of││          │
│          ││          ││Pandemic year ││Pandemic  ││          │
└──────────┘└──────────┘└──────────────┘└──────────┘└──────────┘
```

(Note - Service transition implies huge investment in resources, competitive pricing to acquire service contracts, OEM dependent contracts, low margins on inevitable product revenues)

Resilience during Pandemic

Key Ratios	FY 19-20	FY 20-21
Service Ratio	0.367203822	0.489456075
Gross Margin	17.7%	16.8%
Turnover	2715249089	2837850832

Highlights –

The Service ratio has gone up significantly during the Pandemic Year ! From 99.5 crores to 138.7 crores – a growth of 39.39 %. This is by virtue of drastic enhancement in remote consulting / deployment/ managed services around the pillars built during the transformation journey .

Turnover was expected to move downwards , given the conditions during Pandemic- but turnover has increased by 4.5 % .

Gross margin has reduced by 0.9 % , but that's acceptable considering the scarcity and cost of resources, budget limitations of customers, competitive pricing pressures in the core infrastructure projects.

The above results adequately answer the questions related to disruption created by the Pandemic. It is evident that if the service

transition strategies are correct, then a firm can withstand disasters like the Pandemic.

Chapter – 8

Conclusion, Limitations and Scope for further research
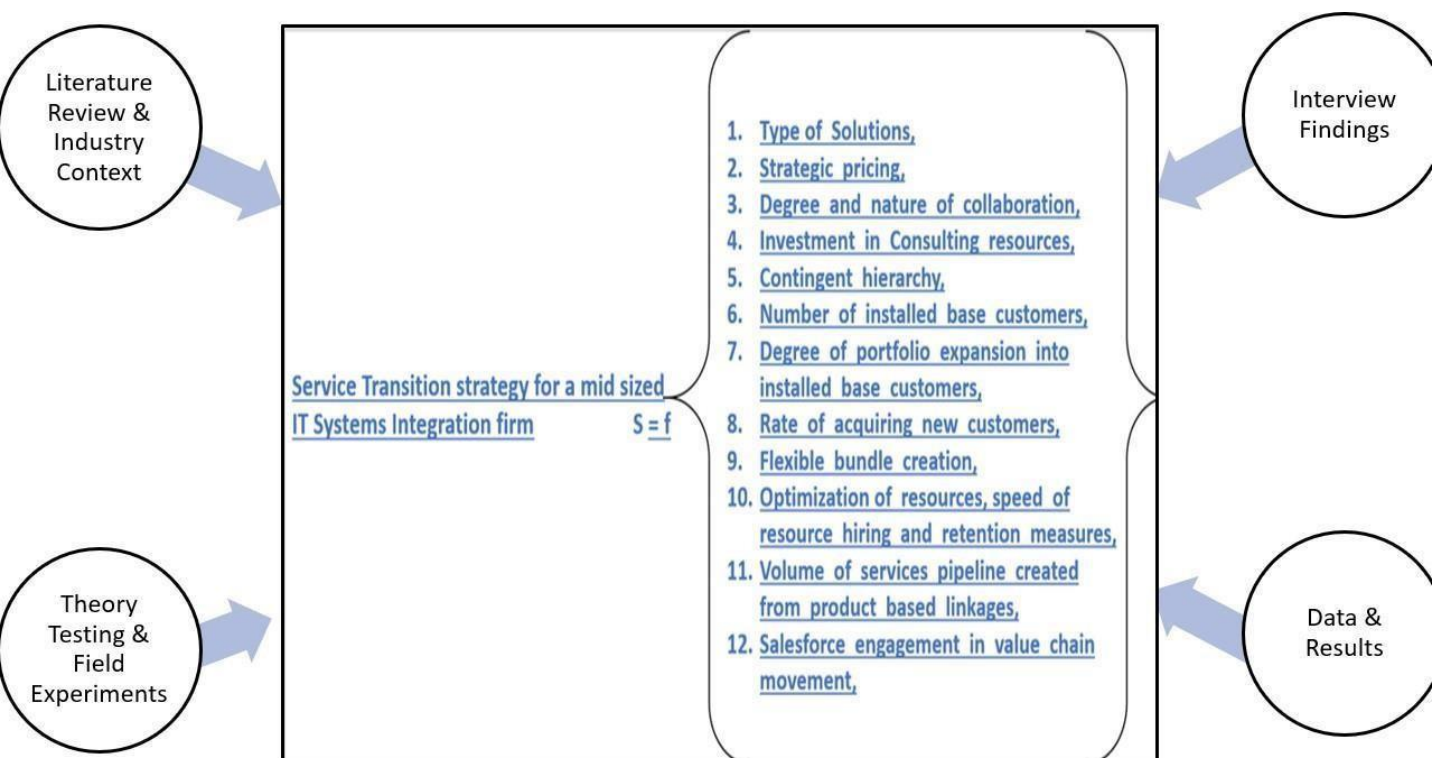
Thus , Literature review, interview findings, Theory testing and Field Experiments, Data and Results lead us to the Conceptual Model as shown above.

- The outcome of this research work is expected to be extremely relevant for emerging and midsized IT Systems Integration, Services and Consulting firms. The transformation strategy deployed in this research can be extended to firms of similar size and business.However this research may find its limitations with large global organisations like TCS, IBM, Wipro to name a few. For such firms research may be conducted with the next level of services like artificial intelligence, machine learning, robotics and IOT.At the same time research can be conducted to test how profitably these firms are managing their cloud analytics and technology practices.

- The specific Consulting Services which are expected to have a predictable success rate in the market for the next 5 years may undergo a drastic change because of future disruptive innovation, therefore further research can work towards finding out fresh transformation strategies and new set of services which will enable companies to survive and prosper in the next decade.

- Such research is expected to create value for mid-sized IT Systems Integration firms in emerging markets by enabling them to grow in revenues, profitability and cashflow through a value migration roadmap and by removal of working capital constraints by attracting external investment.

- This research will yield rich case studies for value migration and organizational transformation of SMEs.

- This research works as an enabler to make a visible contribution to value migration, growth and resilience of an important sector of emerging market companies.

- The insights from this project will help SMEs in the IT sector to migrate up the value ladder by competing on the development of

customer solutions instead of continuing cost-plus "time and material" billing.

- One major limitation of this research is, it does not cover the transformation strategies if mid sized Systems Integration firms go for product development. Instead it emphasizes on building consulting services around established OEM products and solutions. Thus future research can explore strategies around product development.

References and Citations

1. Technology Budgets: From value preservation to value creation by Khalid Kark, Anjali Shaikh and Caroline Brown.

2. Magic Quadrant for operational database management systems by Gartner.

3. Cloud Market in 2018 and Predictions for 2021 by Gartner.

4. The age of analytics: Competing in a data-driven world by Mckinsey.

5. Destination Digital – The Economic Times, Rahul Sachitanand, November 2018.

6. IT Services Industry Trends – Report by Ernst & Young.

7. Seeking qualitative rigor in inductive research. Notes on the GIOIA methodology by Dennis A. Gioia, Kevin G. Corley and Aimes I. Hamiton- Organisation Research method, SAGE Journal.

8. Daley Kutzman – Introductory Applied Econometrics.

9. When and why do customer solutions pay off in business markets - Worm – Sundar Bharadwaj – Ulaga-Reinartz.

10. Hybrid offerings: How manufacturing firms Combine Goods and Services Successfully By Wolfgang Ulaga and Werner J Reinartz.

11. Effect of service transition strategies on firm value - Eric (er) Fang, Robert W. Palmatier, & Jan-Benedict E.M. Steenkamp.

12. Rethinking Customer Solutions: From Product Bundles to Relational Processes, Kapil Tuli, Ajay Kohli and Sundar Bharadwaj.

13. A Practical Guide to Combining Products & Services – Venkatesh Shankar, Leonard. L. Berry and Thomas Dotzel.

14. Creating Growth with Services by Mohanbir Sawhney, Sridhar Balasubramanian and Vish V. Krishnan.

15. Selling techniques for Industrial Products & Services – Are they different? – By Alan J Dubinsky and William Redelius.

16. Winning in the aftermarket by Morris A. Cohen, Narendra Agrawal and Vipul Agrawal.

17. Managing the transition from Products to Services by Rogelio Oliva and Robert Kallenberg.

18. The role of competence in initiating the transition from Products to Service by Margareta Bjurklo, Bo Edvardsson and Heiko Gebauer.

19. The transition from product to service in business markets: An agenda for academic inquiry by Frank Jacob and Wolfgang Ulaga.

20. Managing through Disruption by Anthony Klick

21. Dynamic Effects of Service Transition Strategies on B2B Firm Value: Trade-Offs in Sales, Profits and Cash flow Volatility by Mehdi Nezami, Stefan Worm and Robert W. Palmatier.

22. Is the grass greener? On strategic implications of moving along the value chain for IT service providers by Anandasivam Gopal, Sabari Rajan Karmegam, Balaji R. Koka and William M, Rand.

23. Strategy to usher in the next phase of growth in the Indian IT industry by Narendra Agarwal, Rajesh Pandit, and Divya Menon.

-------------------------------**********************************------------------------------