Design Thinking in Business Strategy: Applications in Human Resource and Pricing

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Design is being positioned as design thinking in management literature, from being a contributor of aesthetics to playing a strategic role, not only in innovating products/services but also transforming businesses. To incorporate design into corporate processes raises two issues: (a) need for an integrated design thinking framework to support business problem solving and (b) cases illustrating application of design thinking in corporate processes. This article describes an integrated design thinking framework for guiding business problem solving towards nurturing innovation. Based on this framework, business leaders were trained in design thinking by the author. Two select application cases are described, where the trained leaders have applied design thinking to corporate processes leading to the optimisation of business processes in human resource management and pricing. This article contributes by demonstrating the value design thinking creates by inducing systems thinking and adopting a human-centred approach to business problem solving.

\textit{keywords: Design Thinking; Corporate Strategy; Pricing; Human Resource}

\textbf{Introduction}

The era of management is proceeding towards complex, fuzzy, and interdependent challenges that are often a result of rapid technological advancements and dynamic customer aspirations. Managers are struggling to formulate strategies with ambiguous and often unpredictable data sets from multiple customer touch points, in an attempt to respond and capture dynamic market needs. According to Martin (2009), managers are
usually trained to formulate strategies from well-defined problems and known data sets and provide risk-averse outcomes. This training often does not enable the managers to deal with ill-defined wicked problems and they rely on interpreting ambiguous data to propose solutions.

Contrary to the managerial approach, designers are trained to solve wicked problems, (Cross, 2001; Dorst, 2011; Owen, 2008). Martin, 2009 states that designer formulate human centred strategies, and develop new propositions from the ambiguous data derived from disparate sources, termed as abductive thinking. The contemporary management literature has indicated a repositioning of the role of design from being a contributor of aesthetics to playing a strategic role, also termed as ‘design thinking’ in innovating not only products, services but also transforming business (Martin, 2009; Norman and Verganti, 2013). In this article the term design thinking can be understood as ‘a creative and systemic problem solving process that can holistically envision or shape new products, processes, businesses, and future societies (social change) by driving user- and context-sensitive solutions (Jalote-Parmar, 2015).

The application of design thinking in business problem solving faces the following two challenges, that this article will address: Firstly, to be able to apply design thinking to a given problem requires ‘design attitude’ which is essentially the approach which designers perceives, frames and solves problems. Michlewski (2015) emphasizes the need to inculcate design attitude in organizations is critical and it receives less attention then needed. Jalote Parmar (2016) state that although design literature proposes that design thinking plays a strategic role in organisations, the inculcation of design attitude in business leaders is severely under emphasised. Brown, 2009, proposed a popular five stage process-based model of design thinking focussing only on product innovation. This model does not include established constructs that are critical towards design problem solving such as problem framing (Dorst, 2011) and systems thinking (Checkland, 1981). This necessitates the need of an integrated design-thinking framework which can inculcate design attitude, in business leaders towards business problem solving. Secondly, although the literature captures several applications of design thinking in product and service innovation such as Bang and Oulufsen (Autsin & Beyerdorfer, 2007), Apple (Thomke & Feinberg, 2012) and Intuit (Smit, 2015). However, there exists a gap in literature defining cases in which design thinking has been applied to solve complex business problems leading to innovation in organisations (Meisiek ,2016; Rusk, 2016).

Addressing, the aforementioned gaps, the contribution of this article is twofold: (a) it describes the integrated design thinking framework for formulating design attitude in business leaders, and (b) it demonstrates the value of design thinking by describing two cases where after being trained in design thinking, business leaders have applied the design thinking framework in business problem solving and inducing innovation. Both the cases demonstrate optimisation of business strategy for talent management and designing value based pricing process in organisations. The following sections describe the integrated design-thinking framework and its application in two organisations:
Integrated design-thinking framework

Brown, 2009, proposed a popular five stage process-based model of design thinking leading to product innovation. This model specifies key stages of how the designer acts on a problem to develop products. This model does not include how the designer perceives/frames at a systems level or visualises/ processes the problem by engaging with the context and multiple stakeholders. Design literature has strongly emphasised several value points in design problem solving that lead to innovation which are not covered in the above model such as – how the designer frames the problem which leads to innovation (Dorst, 2011), co-designing with multiple-stakeholders a critical factor in design problem solving that leads to innovation (Jalote Parmar & Badke-Schaub, 2008). This necessitates the need of an integrated design-thinking framework which defines design attitude - the approach to which the designer perceive the problem that can guide business leaders in approaching complex problem solving. Rusk, 2016 states the need for evaluation of design management education where seeing things in a new way is central to how knowledge is generated and collaboration happens in organisation.

To develop the framework first a primary study was conducted with 30 senior managers with 15-20 years of experience in Indian corporates to investigate the factors that influence the business problem solving specially related to approaching a problem and radical thinking. Details of this study related to formulation of the framework is not a part...
of this conference paper and is forthcoming (Jalote Parmar, 2017). Only select factors from the study are mentioned in this paper: (a) managers are trained to be risk averse and don’t often challenge the existing status quo or reframe the problems (b) managers seek already proven data set to make decisions, (c) managers find it difficult to make decision or formulate a strategy based on ambiguous and disparate information direct from field is provided to them. They require large statistically proven data to be able to formulate a strategy, less number of people interaction in field is not an evidence enough for them. (c) managers are quick in providing solution for problem without having a holistic or systems view of the problem (d) managers can brainstorm based on known and large data sets and formulate assumptions without going out in the field to interact with actual stakeholders (e) managers look at human data as numbers, not people and relation to their aspirations (f) managers often find it difficult to visualise the end solution, they are more focussed on high level planning the strategy, process and execution (g) learning by doing is not a part of tight schedules and process based problem solving process managers, where the managers are more focussed on the deliveries and meeting tight timelines (f) managers solve problems in specific departments, interlinking problem solving between departments within an organisation is not a norm.

Based on the above findings and connecting it with the known constructs of design problem solving as mentioned in design literature (Archer,1979, Cross, 2001, Dorst & Royalkkers, 2006; Dorst, 2011; Checkland, 1981), the integrated design-thinking framework called ‘the banyan tree’ is proposed (Figure 1). The framework uses South Asian ‘Banyan tree’ as a metaphor to denote an adaptive organisation. The tree represents a living organism that is context aware because it continuously senses, adapts, and grows around its environment. Similar to the banyan tree, the new age organisations and managers should be able to develop dynamic capabilities in order to sense and seize opportunities. The seven leaves of the tree [depicted as circles in the Figure 1] are inter-related and symbolise the key constructs that defining the design attitude and are critical to design problem solving. These constructs aid in developing holistic propositions after continuously and iteratively sensing and synthesising information from a global context. Further helps them to challenge the existing way of doing things and solve problems by creating collaborative environments. The following constructs of design attitude have been integrated in the framework and have been explained in Table 1 (Appendix): (a) Context Aware/sense & Respond (b) challenging the existing status quo or reframing the problems (c) abductive thinking/ sensing opportunities from ambiguous data, (d) systems thinking (d) visualisation iteration. (e) co-design, (f) Agile/breaking silos (g) empathy, and (h) Visualisation/Prototype

The trunk of the tree represents the knowledge funnel which was proposed by Martin, 2009. The knowledge funnel represents the processes through which knowledge flows in an organisation and how by applying design thinking for complex problem solving can create an innovative and adaptive organisation. As stated by Martin (2009), the ideas generated from applying design thinking approach should be continuously fed into the knowledge funnel.

**Overarching Method**

Senior management executives (n = 35) with a minimum of 15 -20 years industry experience from 20 large, mid-sized corporates and independent consultants were trained
in design thinking by the first author through an executive programme at a premiere management institute in India. The proposed design thinking framework was taken as a basis for training managers in developing design attitude and in application of design thinking for business problem solving. Post the training for four months the trained managers were observed and where required consulted by the first author (through emails and skype discussions) for application of design thinking in business problem solving. The following sections describe two cases of application of design thinking framework by the above trained managers. These managers from two organisations have addressed problems of human resource specifically in creating talent management system and in creating value-based product pricing.

Case 1: Application of design thinking to design a value-based pricing process

Company background and problem
A mid-sized multinational European chemical company (Company X) with a net worth of 300 million euros was involved in a pricing transformation project. The transformation strategy involved making a shift from cost-based pricing to value-based pricing across the main product lines, within 30 countries in the Business to Business (B2B) market. Cost-based pricing can be understood as pricing that is dictated by market conditions, whereas value-based pricing is when the company sets its prices in a range determined by what the customers are willing to pay. Hence, a value-based pricing strategy requires the company to have an in-depth understanding of the customers’ needs and a value perception of its products.

Currently, Company X applies ad hoc methods to understand its customers and apply the learnings in the pricing process. Because of the ad hoc approaches, decision-making becomes inconsistent and time consuming, often resulting in a disconnect between the customer and the offering. For example, Product Z was launched after a request from the sales organisation and as a validation to offer a medium range alternative for a premium product. The product portfolio exceeding 5,000 Stock Keeping Units (SKU) was to be sold in 10 countries with different economic conditions and buying power from those of the present customers. However, a single price point was offered for the product. Customers’ price deviation demands from the marketing teams were often attended on an ad hoc basis. The pricing problem was solved dynamically, with a focus on providing short-term resolutions, depending on daily operations and decision makers’ availability.

Application of Design Thinking to pricing transformation
One of the managers trained in design thinking (second author) is a pricing consultant working for Company X. This manager applied the fundamentals from the integrated design thinking framework to design value-based pricing. The managers in the first stage of problem solving, conducted a field study with the objective of formulating a systems level understanding of ground level issues of multiple stakeholders involved with the pricing process in the Company X. This included conducting interviews (n = 20) in a span of two months with stakeholders (n = 8) involved in multiple functions of the pricing process. The study also included field visits (n = 10) by the manager in Company X. The stakeholders included country sales directors responsible for business development of the brand,
managers within marketing and sales department, the chief financial officer, and the chief operations officer (COO). The stakeholders were present in the five European countries and interviews were conducted through conference calls. Post the study the findings were analysed by making an affinity diagram and a strategy for new value based pricing was offered. This solution was implemented in the organisation and will be discussed in the section below. First, the key findings from the field interviews are described below:

**Results: Key findings from the field study**

- **Disconnect between sales and marketing:** The findings revealed that there was a relative disconnect between sales and marketing department on the requested price level and the product features offered. The sales department handled direct customers (32% of the revenue) and distributors (68% of the revenue) of the total volume to negotiate prices, sales, and contracts. The product development department, developed the products, decided on the initial price positioning, product feature, and R&D, and monitored the production request. However, although both the sales and product management teams interacted with the customers, the interactions were not simultaneously conducted. The problem solving focus linked to pricing was theoretically converging but factually disconnected because the sales and product management teams often did not agree on the following points: (a) market needs, (b) R&D product features and services, and (c) the targets that were considered achievable in terms of profitability.

- **Lead time for decision making:** A long lead-time, ranging from 5 days to 6 months, was necessary to take the appropriate actions following a market feedback. Information exchange between the sales and marketing teams was, in some cases, not progressing because the same issues remained unsolved for an extended period. Market feedbacks were addressed using an ad hoc and not systemic approach. For example, during a conference call, a country sales director stated that ‘product Y did not have the feature that corresponded with the current market needs’. The marketing team responded that ‘the specifications had been validated 6 months ago and seemed to correspond with the competition’s offering’. The country director countered that ‘the price point of this product is too high, nearly 17% too high, as the features are in some way obsolete’; no decision or follow up action was taken following this critical exchange of views.

**Proposed design of value based pricing process**

Based on the aforementioned findings and the addressing of the key issues, a strategy for value pricing process was designed. Empathy, systems thinking and codesign was used as a focal point to develop a hands-on iterative pricing process. This involved seamlessly multiple stakeholders among different departments (sales, marketing and product development, and accounts) to retrieve and validate market feedback and customer reactions. The process enabled two activities: value based selling (as opposed to the selling of just products with a price) and innovation stimulation. These two elements result in value creation. To make the process iterative, the two way interactions between sales and the customers/distributors occurred throughout the year. This informal and continual manner of conducting the process rendered it more natural for the clients who tend to notice only the effects of the process and not the underlying administration. Once
retrieved, the market feedbacks were processed by pricing management and product management.

![Figure 2: New collaborative value based pricing process with iterative customer feedback and multiple stakeholder engagement.](image)

The information flow was kept simple; six different sources were used to retrieve information: sales employees (eight seniors), distributors or dealers (nearly 26), product managers, suppliers, social media, and focus group. The customer’s expectations of and responses for Company X products and services were then commonly defined, providing a first common base to both sales and product management with objective information and a direct channel of communication. Figure 2 explains the proposed pricing decision making process in which the sales and product management obtain a direct feed of information from four different sources. At the second layer, the sales and product management team need to communicate and exchange information, standing point, and requests on the basis of the same information that they validated together. Before the escalation, they agreed on the method to operate; only the matters that really required the intervention of senior management were escalated to the top management, thereby yielding a decision with a strong information base and analysis previously conducted by the sales and marketing (product management) teams.

**Benefits of value based pricing process**

- Challenging the traditional method of solving the pricing problem in the company as well as empathising and later codesigning with multiple stakeholders involved in the pricing process helped in identifying the major cause of certain price deviations. As Company X evolves in a distributor/dealers market, identifying the original source of an information or request can be challenging. By ensuring that information is being relayed distinctively from all channels, isolating the source becomes feasible.
- The new process significantly reduced the decision lead-time between sales and marketing (product management); the decision time was reduced to 4 hrs to 48 hrs, depending on the urgency of the request. Previously, considerable time was required to make a decision, considering the changing environment and the
ongoing structural and functional changes. Reducing the lead-time and including the multiple stakeholders’ opinions at different stages made the decisions easier to apprehend. Less than 10% of request now required the involvement of VP/board-level employees to be solved.

- The proposed new formal process provided a base for key decision-making in terms of pricing and product’s value. The margins were defended and increased by 2% without loss of market share. It addressed the previously explained key issues because the decisions were being made without a systematic or systems thinking approach and this troubled the stakeholders. The new solution eliminated the complexity of the decision and helped the stakeholders focus on their areas of accountability and fulfill their responsibilities.

- Incorporating regular customer feedback in the pricing process contributed to understanding the customers’ willingness to pay for estimation. Empathy was used to understand customers’ perception of the products, expectations from the products, and value of the products, which were the essential determinants of the willingness to pay. For the company, this insight helped in modifying the products and services to reach the desired value level, enabling the company to price the products and services without losing market shares.

- The newly designed processes adopted the six-sigma approach—define, measure, analyze, design, and verify (DMADV). Design Thinking constructs were incorporated at all the stages of the DMADV, as sense and respond, empathy, co-design and iteration were the leading principle for each stage. The applied process was flexible: step one, ‘define’, was used to identify the need for the process. This involved creating clarity, simplicity, fairness, gaining of time and ability to work with small and large flow of information which is not intensive for the stakeholders; step two, ‘measure’, was an motivation to implement a process with at least some quantifiable information, such as the number of decisions that required the attention of the top management versus the ones that could be handled at a lower level of decision making (i.e. less than 10% out of the approximately 40 cases required the involvement of the top management); step three, ‘analyze’, was used for the analysis of the role of each stakeholder and subsequently place them and make them interact accordingly; steps four and five, ‘design’ and ‘verify’, respectively, were used as an extension of the natural flow of decisions and to validate the results. If the decision-making process and market intelligence are actually useful for the major cases and do not show any signs of weakness, then the results were found valid.

- A workshop was conducted with all stakeholders, country sales directors, and marketing, finance, and operations personnel. Stakeholders were asked open-ended questions to receive their input, expectations on prices, customers, and strategy and to trigger a structured debate. The design of the questions and the method of translating the qualitative feedbacks were also considered a contribution from design thinking because it focused on being sense and responsive and empathising with multiple stakeholders. The question typically asked after the reception of the inputs was what should be a good way of approaching and obtaining feedback from the customers? This provided
additional basis to design all key elements of the pricing process, with the reoccurring objective of translating the customer’s perspective into the process and products.

Case 2: Design thinking application in human resource’s ‘talent management’

Company background and problem
Company Y is an Indian mid-tier Information Technology service provider; it has firmly established itself as a digital transformation partner for its customers, with an annual turnover of (US$ 440 million). It has a complete technology services portfolio including digital, applications, infrastructure, and industry-specific solutions. The company envisages being ahead of the curve in digital space, where mostly all leading clients of the company are using the companies’ digital services, thereby enabling their business transformation. The continual growth in the company pressures the talent management team to identify and retain talent inflow. The company continually endeavours to engage, retain, and up skill/reskill the talent. In addition, the global attrition rate in IT companies is high and in Company Y, it exceeded 17% in the year 2016.

New employees joining further pressurize the companies with increased salary demands; they also take time to understand the complex business process and systems, thus increasing the risk to the ongoing business and impacting customer satisfaction. Another challenge is to rightly distribute the available talent across the running projects and programmes. Teams have an inherent tendency to retain talent, although they might not really be using their entire potential. When there are bigger teams and more than 1000 associates to be handled, finding such hidden, partially utilised talent is difficult. To address this issue of identifying, training, and retaining talent globally, the organisations are investing in automation in the form of software robots. Automatisation is thus helping move dependency from resource to system by automating the decision making process; however, the complete visualisation of the decision making process from a multiple stakeholders’ perspective to optimise bench management is still missing.

Application of design thinking to talent management problem
One of the trained managers (Third author) is an Associate Vice President (delivery head) in the organisation. To address the aforementioned complex problem related to talent management, the manager applied the integrated design thinking framework. The problem solving process begin by conducting 3 field studies with multiple stakeholders. Based on the findings a new strategy for talent management including new policies, process and a multiple stakeholder digital system with mobile application was proposed. This strategy was codesigned with multiple stakeholders, implemented and tested. To understand issues of multi stakeholders involved with bench management, a field study was conducted in the following three stages:

Stage 1: Semistructured interviews and focus groups were conducted for over a week with members of the delivery team (n = 10) that included delivery managers (DMs), leads, and associates. DMs and leads dealt with associates daily and also faced the client for fulfilled/unfulfilled needs. Associates also had their own expectations and beliefs that
surfaced during the discussion. The DM, in addition to ensuring software delivery, is responsible for managing the resource distribution in multiple projects and taking care of talent up/reskilling for current upcoming technologies relevant to projects. Leads ensure quality and timely delivery from developers and their right utilisation.

Stage 2: In this stage, semi-structured interviews (n = 10) were conducted with the Associate Relations (AR), the Programme Control Office (PCO) and Resource Management Group (RMG) representatives. During these sessions, previous survey results on reasons for job exit and great place to work were discussed. Furthermore, challenges related to associate rotation and associate onboarding/off-boarding were understood in detail.

Stage 3: In this stage, one meeting with the learning and organisational development (L&OD) group and training department was conducted to consolidate, verify, and share the learnings of the first two stages.

Key findings from field study

- Lack of opportunity for rotation: More than 80 discrete technologies require expertise. In the current scenario, because associates were working in one project, they were locked with one set of technologies, making it difficult to move them across projects.
- Need for optimal use of resident talent because external hiring is very costly: Associates with niche technical and functional expertise who can be useful in some other projects should not be locked in projects where such technical expertise is underutilised. The team structure should be modified after considering the needs of the project and to meet the margin expectations.
- Need for the visibility of available and upcoming work (pipeline) in business units: To align adequately talent and achieve optimisation in talent utilisation, a clear visibility of available and upcoming work is required; to complete the task in real time and seamlessly, a single source of truth is needed.
- Lack of transparency: A lack of transparency is not by design but inadvertent; unavailability of system and a single source of truth makes it difficult for all stakeholders, including the junior most associates, to examine the data that they should have access to.

Codesign with multidisciplinary teams:

A codesign workshop was conducted involving multidisciplinary stakeholders (n = 20) [Figure 1]. The objective of the focus group was to discuss the findings in previous meetings and identify possible solutions. The participants included stakeholders from different departments connected to the talent management value chain: an AR team, which is an extended arm of the human resource (HR) team in big Business Units (BU) (n = 4), (b) PCO (n = 3), (c) delivery managers (n = 12), (d) and heads, RMG (n = 1) participated in the workshop. Participants were divided into three groups. The contextual enquiry method was adopted to draw insights from all the stakeholders and then build an affinity model; the key issues were identified and clustered into categories. Thereafter, the participants were asked to provide multiple solutions for the insights gathered.
Key findings from codesign process:

- **Working in silos:** The Delivery Team, RMG, PCO, L&OD, and training department worked in silos without regular interaction. The delivery team’s requirements were not clearly understood by the other stakeholders. Each stakeholder was striving to improve their statistics; however, when the systems view of the target was generated, no interconnections were observed, particularly related to attrition, fulfilment of vacant positions, revenue loss, gross margin impact, deployable pool availability, and per year per associate training achievement.

- **Lacking systems view:** During the session, the talent management problem was realised to be handled at the organisational level and not at a Business Unit level.

- **Lack of transparency:** A lack of transparency about the status quo of the talent management process was observed between the different BUs and stakeholders, including the associates.

**Figure 3: Focus group session to facilitate codesigning with RMG, PCO, HR, and DM**

- **Mismanagement of associate placement:** Associates were not included in the right projects considering their skills; they were assigned one project for a long duration. Technically smart associates were sometimes stuck in operations handling production tickets. Smart associates could not achieve rapid career growth because of hierarchies; in other words, fast tracking was absent and associates with niche technology expertise were stuck in projects where that technology was not used. Cross engagement movement was not frequently conducted.

- **Missing integrated view:** The multiple IT systems in the organisation were not integrated towards creating one understanding of HR actions such as (a) Talent availability for RMG function (b) Oracle Human Resource Management System (HRMS) for Resource Data (c) Performance Management System for Appraisals These systems provided isolated views of different sections’ talent management and did not provide an integrated ‘hire to retire’ view that enabled better management. The analytics on the talent data gathered with the aforementioned systems was not available for informed decision making.
Proposed Design of New Talent Management System
To address the above issue, a multilayered strategy emerged from the preceding session. First a ‘Tiger’ team was formed as the key touch point to interact with the multiple stakeholders and the senior management. The Tiger team had one representative from each department to integrate each person’s perspective in decision making and governing policies. Second, the initiated process was changed. The pool management was now rigorously handled by a team called Reserve Work Force (RWF); the rules for releasing associates in this pool and further up/re-skilling were stringent and focused. Results are now extracted from the system and used in the CEO metrics reporting during quarterly reviews. Third, to aid in better visualisation of the talent management process and the status quo of all stakeholders, a prototype software along with a mobile application was developed. This system is described in detail as follows:

To track the progress and to take corrective actions, the baseline was first set first to determine the resource distribution target of a project. The actual resource loading then indicated the deviation, which could now be tracked at individual project manager-level, thereby enabling the delivery head or Business Unit head to take informed decisions for any movement of resources. The pipeline data was fed from the various IT systems into the new proposed system. The available talent was mapped against the forthcoming needs. The available current technology expertise and deviation from target resulted in an immediate creation of a training plan for the associates that was automatically published to the training department, allowing them to publish their training plan and invite nominees. The HR stakeholders were provided dashboards to track the band and expertise levels where the attrition was higher and plan for preventive actions; they could now monitor the deviation of per-resource training needs according to the organisational mandates and the actuals at any instance. Associates could view their position in comparison with all the other employees with similar skills on technology and solution expertise. The standardised assessment and representation helped them be aware of how their career is shaping. The dashboard and user profiles for the multiple stakeholders facilitated the information visualisation and customization of the talent management process. As a next step, it will be integrated with the existing RMG and HRMS systems for
the resource data. The development of the software was an iterative process; it began with white-boarding and creation of a paper prototype. After obtaining the approval from the various stakeholders, the technical team developed this functional prototype in two months using MySQL as the database, Java, Spring, Hibernate, and Fusion Charts.

**Pilot testing and iteration of talent management system**

The system was implemented in limited release mode. A section of the team with all roles covered had access to this application. First, the data entry from 500 associates spread across the USA and India were incorporated into the system and the content was verified and cleaned. This data entry exercise provided the first stage results with the system usage. These inputs were collected and multiple iterations were performed to improve the content and technological platform. In the second stage, the software was accessible to 1500 associates across shores along with other stakeholders.

**Observations in talent management after system deployment**

Two months post iteration with end users, the following key findings were observed:

- **Corrective measures for talent distribution, training, and assessment:** In a single dashboard, viewing the status of training plan, technology expertise, and background profile was easy, current projects, technologies applied and not applied in current projects, and project profiles of the associates sent for training could be accessed by the training department and the senior leads of the BU. Managers could visualise the talent pool in a single dashboard, thus, allowing relevant decision making and prioritising of resources. This visualisation allowed corrective action for talent distribution and assessment because the transparency was very high between stakeholders. For example, the associate’s training needs were quickly identified and linked to the programme needs and client roadmap, eventually leading to customer satisfaction and balanced teams.

- **Career progression visualisation:** Employees such as a newly joined associate, a mid-career associate, and managers could visualise personal career progression and also compare their growth with that of the other associates with similar skills. A happiness index was included in the system, which was given as a solution by the management trainee. The happiness index helped in understanding the aggregate satisfaction of the associates, providing the HR teams with a daily updates and analysing the trends. If happiness index increases or decreases some instances, they can also check the activities happening on or around those days and can try to create an environment that ensures the happiness index is at or exceeds the acceptable mark.

**Conclusion**

The article described the integrated-design thinking framework and its application in managerial problem solving that has led to optimising talent management and creating value-based product pricing in two global organisations. The article demonstrates how the constructs defining design attitude (problem solving) have been instrumental in guiding managers’ ability to sense and perceive problems holistically and at a systems level. Furthermore, the managers can challenge the status quo of the existing solutions and reframe problems from a human-centred perspective by involving multiple stakeholder.
They can engage with the multiple stakeholders and break silos between clients, customers, and internal departments to iteratively and collaboratively design solutions. The human-centred reframing of problems and the agility in iteration leads to a co-working culture in the organisations that also has a long positive impact on customer relations. This article contributes to the design and management literature as a case of application of design thinking in core business processes. The proposed design thinking framework is by no means an absolute framework but provides a pathway address the need having such integrating frameworks which can guide managers in business problem solving. Further work needs to be done in understanding how managers solve problems and how the design problem solving can guide them. This research can guide further development of the integrated design thinking framework.

References

http://www.iimahd.ernet.in/assets/snippets/workingpaperpdf/ 19759117412015-10-01.pdf
Jalote Parmar, A (2017). Design Thinking for Organisitions: Framework and Application (In review-design studies)

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### Appendix 1

**Table 1: Components of design attitude / design problem solving**

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Context awareness/ sense and respond:</strong></td>
<td>Dorst (2011) states that complex problems have their formulation and roots in a specific context that requires defining and analysis before the framing and solving of problems. This essentially builds on abductive logic to interpret the unpredictable and ambiguous information derived from a dynamic business landscape. This design attitude, when ingrained in managers, induces skills to ‘act like sensors’ to gather information from disparate sources. Context awareness requires foresightedness (Wilkinson, Mayer, et al., 2014) and the ability to be ‘a class observer’ to visualise futuristic propositions and innovations (Kelly, 2001; Verganti, 2009; Jalote Parmar, 2015).</td>
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<tr>
<td><strong>Challenging assumption/ Reframing opportunities:</strong></td>
<td>Design thinking problem solving begins with the reframing of the problem by challenging the existing status quo of the selected problem, entity, product, or process. Design thinking emphasises the development of a new perspective by reframing the given problem to generate a new meaning/value and create newer patterns and propositions that often result in disruptive innovation (Verganti, 2009; Dorst, 2015). The ability to challenge the status quo of a given entity should be engrained in managers through thought leadership to allow the freedom of challenging the existing order to reframe opportunities.</td>
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<td><strong>Empathy:</strong></td>
<td>Empathy involves immersion in the problem context; it includes analysing the problem context in the field to understand the interconnections between users, workflows, systems, technologies, and cultures (Cross, 2001). Field immersion provides design thinkers (a) a macro and micro view of the problem context, in other words zoom in and zoom out of the problem; (b) a perspective, problems and needs of multiple stakeholders that are connected to the ‘problem context’; and (c) provide insights to constraints arising from the context the user is operating in, and how these constraints are impacting the work (Jalote Parmar &amp; Badke-Schaub, 2008). Hence, when the concept proposal is ready, these constraints can be applied to test the solution’s applicability in the live context.</td>
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<td><strong>Systems thinking:</strong></td>
<td>Problem understanding and solutions must be proposed not in silos but after considering the interconnections. Checkland (1981) states that systems thinking works under the premise that all components, people, and society’s technologies are interconnected.</td>
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<td><strong>Agility/ breaking silos:</strong></td>
<td>Design thinking problem solving relies on two approaches to solve a problem: (a) breaking silos, the creation of interdisciplinary platforms and teams between the different functions of organisations to address problems. As nonconformists, design thinkers move between different functions to iterate thoughts and develop solutions; occasionally, they even cross hierarchical boundaries within organisations to complete the task; and (b) agile, the creation of consistent mechanisms in the organisation that allow quick testing of concepts/prototype with multiple stakeholders and context, whether it is a product, process, or a policy. This requires a decentralised decision making process and the framing of agile organisations that...</td>
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prioritise action while improving the speed and quality of the decisions. According to Birkinshaw and Ridderstråle (2015), agility implies the speed with which the organisation responds and adapts to both long and short term changes in the business context.

**Codesign:**
Co-design means that the end customers and multidisciplinary stakeholders are brought into the decision making process early on. Retaining persistence and transparency in communication is the key towards establishing co-design in creating new products and solutions. Early adoption of domain specialists and end users also leads to early adoption of the product (Jalote-Parmar & Badke Schaub., et al, 2010). The reason being there is correct identification of the issue, and multidisciplinary view of the context. Facilitating this approach to co-design should be a formal part of the innovation process in organizations.

**Visualisation/Prototype:**
The planning and patterning of any task towards a desired foreseeable end constitutes the design problem solving process. It includes acts of internalisation of the problems and also externalisation of solutions by visualising existing situations into preferred ones (Simon 1969; Owen, 2008). Quick externalising of thoughts can be done through prototyping, which may range from a low fidelity to a scaled up model depending upon the stage of development.
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