

## Meeting Global Challenges through Innovation: A Design Thinking Approach to Support the Revival and Sustainable Development

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***Abstract:** On entering the new decade, the global economy has started experiencing a multifaceted set of development challenges. The unprecedented pandemic crisis of COVID-19 and increasing poverty rates are unbounded in several economies. In this backdrop, our research is an endeavour to illustrate the potential of innovation to address the unprecedented economic, environmental, and social challenges through an innovative Design Thinking approach to Support the Revival and Sustainable Development. Some case studies and examples have been demonstrated to show how design thinking approach is used to unlock the power of innovation to support the creation of economic and social value that has some significant implications for Sustainable Development.*

***Keywords:** Design Thinking Approach, Social Innovation, Sustainable Development, Global Challenges, Innovative Solution*

### 1. INTRODUCTION

The unprecedented pandemic crisis of COVID-19 and the lockdown have shattered the global economy in a severe way. The entire world economy has been passing through a great uncertainty than ever before. Moreover, the Coronavirus has placed the world economy at tremendous risk and uncertainty. According to the World Trade Organisation (WTO), the world trade was expected to drop by between 13 percent to 32 percent in 2020, the world has faced an economic downturn. The Pandemic has caused tremendous shock for the Indian economy as well. Exports, Consumption Pattern, capital flows, manufacturing and service sectors which had continuously been the important growth drivers of the economy over last few decades, have all been impacted adversely. Along with the other economic challenges, The COVID-19 pandemic has disrupted normal economic activities and life across the globe and world trade has also been severely impacted.

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In this backdrop, our research is an endeavour to illustrate the potential of innovation to address the unprecedented economic, environmental, and social challenges through an innovative Design Thinking approach to Support the Revival and Sustainable Development. Some case studies and examples have been demonstrated to show how design thinking approach is used to unlock the power of innovation to support the creation of social and economic value which has some significant implications for Sustainable Development.

Today's global challenges be it pandemic or poverty, be it climate change or unemployment – all are associated to economic, environment and social challenges in a significant way. To address this global economic crisis, it is pertinent to understand the importance of mobilizing science, technology, and innovation not only for deriving real economic benefits and but also for anticipating and responding to various economic and social challenges in the years to come.

**Table 1: Sustainable Development Goals**

Sr.no	Goal	Details
1	GOAL ONE: Ensure No Poverty	To end poverty in all its forms everywhere across the globe
2	GOAL TWO: Achieve Zero Hunger	To end hunger and achieve food security and improved nutrition and promoting sustainable agriculture
3	GOAL THREE: Ensure Good Health and Well-being	To ensure healthy lives and to promote well-being for all at all ages
4	GOAL FOUR: Ensure Quality Education	To ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
5	GOAL FIVE: Achieve Gender Equality	To achieve gender equality and empower all women and girls
6	GOAL SIX: Ensure Clean Water and Sanitation	To ensure availability and sustainable management of water and sanitation for all
7	GOAL SEVEN: Ensure Affordable and Clean Energy	To ensure access to affordable, reliable, sustainable, and modern energy for all
8	GOAL EIGHT: Promote Decent Work and Economic Growth	To promote sustained, inclusive, and sustainable economic growth, full and productive

Sr.no	Goal	Details
		Employment and decent work for all
9	GOAL NINE: Build Industry, Innovation and Infrastructure	To build resilient infrastructure, promote sustainable and inclusive industrialization and foster innovation
10	GOAL TEN: Reduced Inequality among countries	To reduce inequality within and among countries
11	GOAL ELEVEN: Make Sustainable Cities and Communities	To make all cities and human settlements inclusive safe, resilient, and sustainable
12	GOAL TWELVE: Ensure Responsible Consumption and Production	To ensure sustainable consumption and its production patterns
13	GOAL THIRTEEN: Combat Climate Action	To take urgent action for combating climate change and its impacts
14	GOAL FOURTEEN: Conserve Life Below Water	To conserve and sustainably use the oceans, seas, and marine resources for sustainable development
15	GOAL FIFTEEN: Protect Life on Land	To protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
16	GOAL SIXTEEN: Promote Peace and Justice Strong Institutions	To promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable, and inclusive institutions at all levels
17	GOAL SEVENTEEN: Create Partnerships to achieve the Goal	Strengthening the means of implementation & revitalizing the Global Partnership for Sustainable Development

Source: World Economic Situation and Prospects 2020

## 2. PRESENT UNDERSTANDING AND EXPECTATION

An inclusive and dynamic global economy is necessary for fulfilling the optimistic targets of the Sustainable Development Agenda for 2030. The world economy has experienced a significant deterioration over the past few decades, amid prolonged trade disputes and wide-ranging policy uncertainties. This threatens to obstruct efforts to create employment opportunities, reduce poverty, broaden access to clean and affordable energy and achieve many

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other Sustainable Development Goals. As per United Nation's Economic and Social Affairs Economic Analysis (February 2020), gross product growth of the world had slipped to the lowest rate 2.3 per cent in 2019, since the global financial crisis of 2008-2009. (World Economic Situation and Prospects: February 2020 Briefing, No. 134)

In the present scenario of global challenges, which is characterized by complexity, volatility, and uncertainty, it is imperative to look at diverse and unique ways of thinking and problem solving. For the past decade and half, this problem-solving approach has been dramatically shifted towards the most creative approach of innovative thinking. To meet global challenges and to gain competitive advantage in this uncertain world, it is extremely important for businesses to imbibe design thinking approach into the core of all innovation efforts.

Design thinking is an innovative approach towards problem solving. It is an innovative process, where there is a lot of emphasis on trial and error or experimentation. This research explores how various global challenges could be addressed through this innovative design thinking approach to Support the Revival and Sustainable Development goals. Innovative solutions can significantly affect Human Resources, Energy, Sustainability, Education, Economic and Environmental Constraints, Rapidly growing inequality, and other developmental challenges.

**2.1 Design Thinking Approach towards Sustainability**

At the outset, it is imperative to have sound knowledge and understanding about sustainable issues and challenges to come up with some creative, out-of-the-box, long-term permanent solutions to the world's development challenges. In the whole process, Sustainable Cost is very important aspect to understand, measure and control. Unfortunately, most of the sustainable projects often require considerable investments and escalating costs. Therefore, another challenge for design thinkers is to think of an innovative solution that not only supports sustainable goals but also effective in utilizing scarce resources and consuming costs judiciously. Once designer thinkers completely understand the impact of sustainable solutions and various costs associated to it, and then only can they develop long term strategies to attain the development goals.

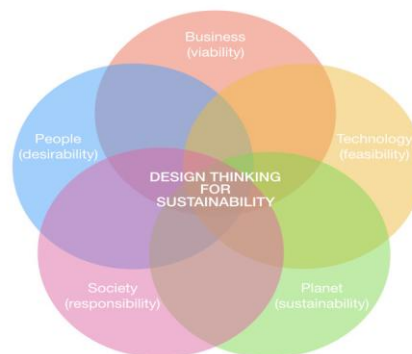
**2.2 The Strategic Design Thinking Model**

Design thinking process plays a critical role in addressing and solving sustainability issues in today's uncertain world. Brown and Wyatt (2010), the pioneer of design thinking process, defines the process as "a human-centric approach to innovation that draws from the designer's toolkit to integrate the needs of people, the possibilities of technology, and the requirements for business success." Though designers usually seek the sweet-spot crossover

between all three segments, they usually enter through the desirability (user) quadrant, hence the term named as human-centric design. It is obvious today that this model of design thinking is missing any reference to sustainability, planetary limits, or wider responsibility to society, feeling like it was conceived in a world whose main drivers were growth and competitiveness and/or consumer and buyer preferences alone. Inevitably this leads us to the obvious question of what a model for design thinking for sustainability should look like.

**Two potential models on design thinking** have been demonstrated here that take the Venn diagram of Business Viability, User Desirability and Technology Feasibility as their starting point then add two further sustainability factors: social responsibility (society) and environmental sustainability (planet).

**The first model** extends the three quadrants Venn diagram with Planet (sustainability) and Society (responsibility) circles arguing that design thinking for sustainability considers and balances the needs of these five different perspectives. The sweet spot lies in the overlap between the five.



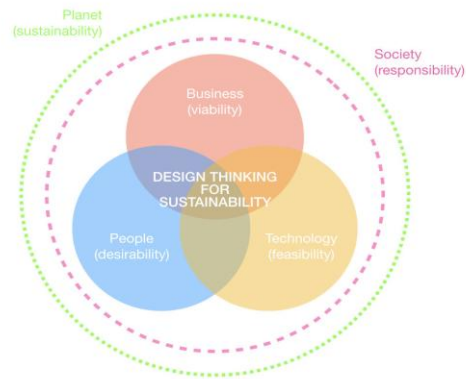
**Figure 1: Design Thinking Approach to support Sustainable Development**

Source: <https://www.linkedin.com/pulse/design-thinking-sustainability-model-progress-chris-sherwin>

The second model keeps the current three quadrant design thinking model intact, considering this as primarily an economic activity. The economy nevertheless is a sub-set of society, so design thinking must operate within the boundaries and norms of Social Responsibility i.e., not to use exploitative supply chains, build communities, fair trading etc. After all, society is a sub-set of our Mother Earth, being utterly sub-ordinate to planetary limits and relying entirely on natural capital for economic and social well-being, so the outer ring is Environmental Sustainability. Thus, design thinking fits the

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original model, which is in turn bounded by the two circles of Society (Responsibility) and Planet (Sustainability).



**Figure 2: Proposed Design Thinking Model for Sustainability**

Source: <https://www.linkedin.com/pulse/design-thinking-sustainability-model-progress-chris-sherwin>

### 2.3 Design thinking for Sustainability

The real motivation and challenge are to harness the powerful forces of design thinking to change businesses, innovators and governments, the important change agents to Support the Revival and Sustainable Development - and revolve this to attain sustainability goals.

### 3. LITERATURE REVIEW AND RESEARCH STUDY: INNOVATION AS A STRATEGY AND KEY SOURCE OF LONG-TERM GROWTH

The objective of this research is to portray the concept of Design Thinking Approach as a powerful technique to unlock the innovative solutions and suggest analysis and ideas regarding the relevance of innovation for addressing the various social and economic challenges. As the drivers of innovation are evolving, the innovation processes and policies across the globe also need new approaches to unlock the hidden potential of innovation. We carried out an extensive literature review to search examples from today's innovative practices and policies to explore an innovative approach towards transformation opportunities and sustainability challenges. The entire process will be addressed by Design Thinking Approach towards sustainability. Sustainable Development will influence long-term process and the output with the wonderful synergy of the people, societies, the economy, and the environment. Sustainable development calls for innovation and Design thinking can act as a powerful approach to address various challenges of Sustainable Development Goals and support the revival process.

Srinivas, et. al., (2006) had sketched a framework for thinking of economic development and innovation that focuses on the local relevance and application of varied types of technological effort especially problem-solving approach, that viewed through a cognitive lens.

Fostering innovation to address social challenges is the need of the hour and Innovation has been recognised as a Key Strategy and significant contributor to higher productivity to confront global and social challenges. Today's social challenges are multidimensional, complex, and critical, be it from the climate change to ageing societies or be it from energy efficiency to social security and so on. Equitability is another major issue to address the worldwide uneven distribution of income and wealth. Innovation has emerged as one of the key engines of growth. It has been observed that the disconnection between economic growth and well being is increasing. To address these social challenges, the role of science and technology is significant and critical as this is associated with a multidisciplinary approach and involves multilateral collaboration among various stakeholders. This trend has gradually shifted our understanding of innovation and has been spreading globally and rapidly leading to a more balanced development path for economic growth and social welfare. The present global crisis has made the need for innovation to address its various challenges even more severe and obvious.

Schumpeter (1961) describes innovation as “industrial application of something new – a new product, process, or method of production; a new market or source of supply; a new form of business, commercial, or financial organization” In his work, Schumpeter (1961) linked the concept of innovation to the economy; especially this definition demonstrates strong correlation between innovation and the ability of firms to develop processes that are appropriate for the capitalist context.

The literature on sustainable development and innovation demonstrates that there is a lack of ample research with tremendous scope and the explicit linking of innovation to Sustainable development as a process of learning, has drawn significant attention in the innovation literature (Hobday, 2002). Studies that focus on learning and technological capabilities come closest to this research initiative here (Katz 1987; Cohen and Levinthal 1990; Bell and Pavitt 1993; Lall and Teubal 1998) to highlight the importance of articulation, utilization, absorption, and exploitation of knowledge. They also draw a string between learning and firm-level capabilities, to industrial-scale successes or failures. The learning environments of developed industrialized

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and industrializing countries are significantly different in many ways; hence these differences invariably lead to differences in skill sets that have been already recognised in some industrializing countries' literature. Further, literature from industrializing countries has since long addressed this issue (Katz 1987), and the pioneering works on National Systems of Innovation already mentioned have contributed to that direction as well.

Addressing global challenges demands innovative solutions at all levels with a wide and pervasive scope, from the micro-level of individual action to macro policy level solutions. In this context involvement of public has become a critical factor to play an important role to initiate this paradigm shift for innovation and to integrate social value into incentives mechanism. The experimentation on their long term inter-ministerial intervention, demand-side instruments combined with the supply-side instruments, has already been implemented in different environments under various social challenges that might pave the way for new ways of involvement to improve the policy maker's 'toolbox'.

**3.1 Design Thinking: A Powerful Key to Unlock Innovative Solutions**

The progress of human civilization is filled with countless innovations. Our society is the crucible of any innovation. Innovation starts with the society's need, which is then fulfilled by creating new solutions or by improving existing solutions. However, the challenge lies in identifying the real need of the society. Design Thinking has been very successful in adopting a human centered approach in identifying the need of the society. Design Thinking helps build an emotional connection with the user needs and unlock innovative solutions to a problem through convergent-divergent thinking. There are numerous examples of successful use of design thinking in coming up with innovative solutions. Liedtka (2018) described how a variety of human tendencies come in the way of innovation and how design thinking's process can help overcome any human biases and unlock the true and hidden needs are described.

Social innovation as per the definition of Stanford Center for Social Innovation, "Social innovation is the process of developing and deploying effective solutions to challenging and often systemic social and environmental issues in support of social progress." It also states that "Social innovation is not the prerogative or privilege of any organizational form or legal structure. Solutions often require the active collaboration of constituents across government, business, and the nonprofit world".



The value of social innovation, therefore, lies in how the society looks at the innovation and how do the people in the society do reap its benefits. Therefore, the human-centric view is extremely critical for solving social issues.

### **3.2 The Concept of Design Thinking Approach**

The concept of design thinking is closely related to innovation. There are many definitions of Design Thinking. Among them, the simplest definition is given by IDEO U, which is the online training school of award-winning design firm IDEO. As per IDEO U “Design thinking is a process for creative problem solving”. As there are many people and many organizations practicing Design Thinking, there are many flavors of this process. A very common flavor of this process is given by Stand Ford D-School. However whichever process you follow or whichever toolkit you use, there is strong commonality between all of them. At the heart of Design Thinking there is constant iteration for identifying and evaluating needs and then finding and evaluating solution that fulfils the need. This iteration continues until the most novel and most useful solution is found. According to Tim Brown, famous designer, entrepreneur, and professor, “Design thinking is a human-centered approach to innovation that integrates the needs of people, the possibilities of technology, and the requirements for business success”.

### **3.3 Design Thinking Framework for Social Innovation**

Social Innovation needs interactions and collaborations between various social entities like, the people of society, communities, government bodies, social entrepreneurs, innovators etc. This makes Design Thinking a perfect choice for social innovation due to its human centric approach to a problem. Design thinking will allow various divergent ideas to bubble up and then coagulate to form bigger and solid ideas. Design Thinking will pave the way for choice of most appropriate idea through its iterative and experimental nature. Tim Brown (2011) outlined how design thinking can be adopted in the context of social innovation. Design Thinking can be used as a scalable framework to make an existing solution better or create a completely new solution. However, a very important criterion for success is to ask the most appropriate question. This would require the problem or social ill to be seen at various angles and gain insights. Asking a question that is just a paraphrasing of the problem may not help. Hence a fundamental prerequisite is- to use all the insights to ask the most appropriate questions that go into the heart of the problem or social ill.

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In her work, Catherine Docherty (2017) referred Design Thinking as not a panacea of all social problems but as an enabler of innovation. Her work found that Design thinking can facilitate evolving of shared thinking and can empower stakeholders involved. Daniela Selloni & Marta Corubolo (2017) found that following Design Thinking in social innovation may bring in cultural and organizational changes.

**3.4 Research Approach****Research Methodology and Research Questions**

We adopted a review-based approach for this work. This was done with an objective to understand what work has already been reported in the literature. Based on the outcome of review-based research, further research using empirical studies can be undertaken to understand any specific topic of interest.

In the first part of this paper, given above, we looked at some of the literature to understand the level of appropriateness of “Design Thinking” in the context of social innovation. Based on all the discussions above, we can arguably say Design Thinking is naturally amenable for social innovation.

Based on all the discussions about, we can arguably say Design Thinking is naturally amenable for social innovation. Therefore, question arises,

- a) Was Design Thinking applied before for social problems?
- b) What were the outcome and what lessons we can derive that we need to know while applying Design Thinking in social problem solving?

**Application of Design Thinking in Solving Social Problems**

In recent work, Chou (2018) reported a detailed review of social entrepreneurship theories and how Design Thinking methodologies can be used. This work touched upon case studies and listed out few issues found during research.

In later part of this paper, we looked at several case studies reported in the literature to analyze the research questions. We shortlisted few case studies in this work mainly due to the following considerations:

- a) Case studies need to be relevant for social innovation aimed at the general class of people belonging to the society's economically weaker section. The goal was to pick up such work that has an impact on a very large and vulnerable section

- b) Case studies must be done in India or any other emerging economy. Such countries need social innovation badly to improve the overall quality of life for common people
- c) Case studies should cover not only success but also failures. The goal is to learn how to repeat the successes and avoid mistakes or failures

In the remaining part of the paper, we used few shortlisted case studies, reported in literature, to seek answers to the above questions.

**3.4.1 Case Study#1:** Our first case study was a community treatment plant in a city in India. The details of the study were reported in the Stanford Social Innovation Review (Brown & Wyatt, 2010). A community water treatment plant was built by a foundation for poor and marginalized society who did not have access to clean and potable water in an affordable way. Foundation was successful in creating a solution that can supply 5 gallons of clean and potable water to every household daily at a very low price. In fact, many households started using it to their satisfaction and were greatly benefitted. However, soon it was realized that not every household could use it, contrary to the vision of the foundation. A little investigation revealed that, though clean water was available at low price, carrying a huge amount of water was not an easy task. In many families, the only available member of the family who can fetch water are women or young children and for them it was not an easy task at all. As a result, many households chose to stay away from using the service.

**Observations:** So, in this case study, we realize that the need of the users or community was not understood holistically. The designer focused on the main problem, which in this case was availability of clean water at low price. However, the surroundings that can make or break a solution is often ignored.

**3.4.2 Case Study#2:** This case study is about “The Embrace Baby Warmer” project. In this project a group of students from Stanford University designed a low-cost device to keep newborn babies warm over the dark and cold night (Soule, 2013). This device was an immense success. As per the report in 2013, this device helped 22,000 low-birth-weight babies around the world stay warm. But like many projects, the initial journey of this project was bumpy. The team worked on designing the device and built an early prototype of a low-cost incubator. But while doing their field work in Nepal with the

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early prototype, team realized that some of their understanding of the problem was not accurate enough. Low-birth-weight babies often develop fatal hypothermia in homes and most of the times such homes in villages or remote part of the country lack electricity. This realization helped the team to re-cast their problem which paved the way for successful launch of “The Embrace Baby Warmer”.

**Observations:** This case study demonstrated the power of building early prototype and testing or reviewing with the users much ahead of formal launch. This helps to go deeper into the problem and build insights which can change the course in right direction instead of realizing the short comings at a much later stage when fixing it may become too costly.

- 3.4.3 **Case Study#3:** Our third case study was about high-quality eye care made available at an affordable cost to low-income customer as reported by Aravind Eye Care System. The motivation for this service was derived from McDonald’s who delivers a consistent taste and quality of their burgers across globe at a reasonable price. This was made possible through a well standardized process and efficient execution. Dr. G. Venkataswamy (Dr. V), founder of the remarkable Aravind Eye Care System, took this idea from McDonald’s and envisioned how this can be replicated in Eye care. His vision backed by a well thought strategy and well-planned execution made low cost but high-quality eye care possible for poor people.

**Observations:** Receiving a high-quality healthcare service (in this case eye care) is an expectation of every citizen. However, in a country like India this is often not possible due to high cost. In this case study we see that having an insight to what every poor citizen wants from an eye care, made it possible to realize the vision.

- 3.4.4 **Case Study#4:** Our fourth case study is about Energy Solutions for the New Generation by Design Thinking at Innogy SE which is an energy company based in Essen, Germany. They were looking for a "city mobility" solution.

**Research Methodology:** To understand their problems, they organized a workshop on design thinking. Where participants try to find the scope of "city mobility"? Have tried to figure out what the problem is? How big is it? Who suffers from these problems? They have experts who have contributed their expertise, circulating surveys through their channels, and getting good reviews.

**Problem identified:** The ‘egg-chicken’ dilemma of e-Mobility. Energy suppliers do not develop a network of charging stations because electric vehicles are not enough. Car manufacturers, on the other hand, do not produce electric vehicles because there are no charging stations.

**Observations:** A shared eCar was developed by connecting existing and unused Innogy charging networks to this challenge, a project in which Innogy provides communities, local businesses, and citizens with access to flexible e-mobility solutions. Users can order e-cars online and pick them up at innogy charging stations. This is a particularly attractive offer for municipalities or businesses looking to provide eco-friendly e-cars to their employees, who are unwilling or unable to maintain e-cars. Innogy has consolidated its electric vehicle operations into a new subsidiary called eMobility (2016). It operates one of the largest charging networks in Europe and has 7,000 charging points in more than 20 countries. In mid-2017, Innogy conducted eCarSharing in four German communities with more than 12 e-cars and has already saved over 1.5 tonnes of CO2 emissions.

**3.4.5 Case Study#5:** Our fifth Case study shows how an Improved Food Service Creates a Better Life Quality for Elderly People. Danish innovation and design agency Hatch and Bloom was assigned to design a new meal service with enhanced quality, more flexibility, and more freedom of choice to offer to Elderly People.

**Methodology:** Municipality of Holstebro had implemented an innovative program through the Danish Construction Authority and Enterprise. This whole initiative was led by Lotte Lyngsted Jepsen over the next 6 months. They administered a survey among their elderly clients about their menu preferences. This made a paradigm shift in designing a whole new meal service offering enhanced quality with great flexibility with increased choice.

Realizing that the aging of Elderly population experiences many challenges they deliver subsidized meals to people who suffered from a reduced ability to function, due to illness, age, or other conditions. Most of the seniors have nutritional challenges and poor quality of lives due to their insufficient food intake per day. It was estimated that 60% of Denmark’s seniors in assisted living facilities, 20% were malnourished or residential care units have poor nutrition.

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That caused both low quality of life and health related problems for the elderly population and a greater social and economic burden on the government.

**Observation:** As one of the most important elements of the transformation was the shift in employees' perception of themselves and their work. Kitchen workers were much more satisfied and motivated than ever before. As a result, customers are happier with their food. Anne Marie Nielsen, the director of The Good Kitchen believes that "If you have professional pride, you'll also cook good food," and "Good food has to come from the heart! This experience generated so much positive energy. Those positive reactions spread everywhere—from users and partners to end consumers in other municipalities.

Once the transformation from Hospitable Food Services to The Good Kitchen was complete, the results spoke for themselves. Reorganizing the menu and improving the descriptions of the meals drove a tremendous increase in the quality of life of the elderly people with conditions with lots of menu choices because of which 500% increase in meal orders in the first week alone.

**3.4.6 Case Study#6:** This last case study shows the application of Design thinking as an empathic approach at GE Healthcare where it extremely needed to empathize and understand how children experience CT, X-Ray and MRI scanning procedures by Changing Experiences through Empathy – The Adventure Series Pediatric patients remember CT, X-ray and MRI procedures as unpleasant feelings. This makes it difficult for technicians to carry out the procedure. GE Healthcare worked harder to find a solution. Children's experiences or how happy they are will be more difficult than adults. Children usually have a hard time explaining health problems or physical discomfort. Industrial designer Doug Dietz, who has been with GE Healthcare for a long time and can feel how terrible the scanner can be for pediatric patients, is compassionate.

**Problem definition:** To find solutions that makes scanners or other diagnostic equipment an enjoyable experience for children.

**Methodology:** Doug Dietz started by observing and empathizing with young children in day care centre, after speaking with the experts in children's lives. A small team of GE volunteers, the

experts from local children's museums and doctors and staff from both hospitals assisted Doug Dietz in the whole Design Thinking Experiment and Testing. Doug Dietz created the first prototype of what would become the “Adventure Series” scanner. He creates a underwater adventurous experience for children’s by using special light, sound, visuals, pictures and colour on equipment’s and rooms.

**Results:** As the immediate consequence, the patient satisfaction score increased by 90% with no child any longer suffered from anxiety or tension, rather, some of them even asked their parents if they could come back next day for having the same fun. This helped children hold still in the diagnostic room during procedures, and the doctor does not have to repeat the scan. More patients were able to scan daily as the need for anaesthesiologists declined, which had a major impact on the financial side of the economy. The feeling of joy and play during the scan also reassured the parents of the incident. The application and use of design thinking and innovation methods were incorporated in their teams.



**Figure 3: Application of Design Thinking at GE Healthcare**

Source: GE-Adventure Series – The Pirate Room

#### 4. CONCLUSION

In this paper, we started by looking into the importance of Design Thinking and its relevance for social innovation. We then looked at few case studies where Design Thinking was applied in solving social challenges.

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Those case studies could successfully demonstrate the power of Design Thinking and its applicability in the context of social innovation. In the first case study, we saw the importance of immersion into the user's life and understand their pains and challenges which gives more insight. In the second case study, we saw the advantage of early prototyping and engaging with the user community that help the project pivot into right direction instead of realizing the gap much later. In the third case study we saw that a powerful vision with deep insights into user's expectations holds a key for success. In the fourth case study, it can be observed how Innogy established their innovation hub with the mission to create a sustainable energy system for new generations to live in a world worth having and how design thinking approach can be applied in a most creative and efficient way to find solution ideas for problems that are worth solving. The fifth Case study shows How an Improved Food Service can create a Better Life Quality for Elderly People through an innovative meal service with enhanced quality, more flexibility and freedom of choice to offer to Elderly People. The sixth Case study shows how Design thinking can be applied as an empathic approach at GE Healthcare to transform the children's scary unpleasant scanning experience into a pleasant, fun loving adventurous one.

Sustainable development Goals compel companies to develop products and services for new emerging markets that demand better control over the product and service life cycles, the usage of recycled materials, energy efficiency to ensure quality of life. Sustainability is considered as a driver of innovation that compels companies to think out of the box to go one step ahead and to anticipate the market to demand sustainable development in products and services. Companies should be able to visualize against the narrow interests of markets by linking their vision, mission, and practices to their social, economic and environmental responsibility. While the other resources are scarce, the creativity and innovation of an entrepreneur is the key to success. Design Thinking as a systematic way of solving problems has already been adopted successfully by many companies. In this paper, we saw that the social entrepreneurs can also use design thinking for creating innovative and cost-effective solutions to the social problems. However, many social entrepreneurs may not be aware of the power of Design Thinking and there could be many who are aware but do not have enough knowledge or experience in implementing it. Attending an education and training program in Design Thinking will be a valuable proposition for such groups so that they can play the important role of change agent in the entire socio-economic development process.



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