SIEMENS Healthineers

Review of innovation tools and highlights of the Innovation Think Tank methodology

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Abstract

Innovation is crucial for companies seeking to compete in today's rapidly evolving business landscape. This chapter looks at various methods and tools that facilitate innovation and enable companies to grow and succeed. It provides a brief description of each method and tool, highlighting their key features and benefits. It also presents the results obtained by comparing these methods and tools with the Innovation Think Tank (ITT) methodology and shows their contribution to business success. ITT is a department under the Chief Technology Office of Siemens Healthineers AG (SHS). It is a global infrastructure of co-creation programs and labs established at various SHS locations and prestigious universities, hospitals, and ministries of health around the world. ITT methodology has been implemented to create innovative solutions prepositions for more than 2500 research and development, and strategy projects over the last 19 years. The valuable insights, innovative solutions, institutional challenges, and key trends generated by the use of the ITT methodology could cater to future co-creation and co-implementation in healthcare innovation world. Furthermore, the feedbacks gathered from the ITT methodology trainings show how ITT methodology tools have aided in the development of an implementation roadmap that can foster innovation and make the realization of the proposed solutions a possibility. A literature review was also conducted to gather theoretical insights on the various methods and tools that can also be used hand in hand, facilitating innovation.

Keywords: Innovations, methods, tools, Innovation Think Tank methodology, healthcare

Introduction

In today's era of technology disruption, innovation is of outmost important. Innovation is a crucial element in today's dynamic business environment. It is the catalyst for growth and success, enabling companies to overcome challenges, seize opportunities and stay ahead of the competition. To effectively foster innovation, companies need to adopt a range of methods and tools that facilitate ideation, problem solving and implementation. This white paper chapter examines several prominent innovation methods and tools, briefly describing each and highlighting the comprehensive approach of the Innovation Think Tank Methodology. The objective of this paper is to 1) explore and capture various methods and tools that facilitate innovation within organizations. 2) Provide a comprehensive overview of these innovation enablers, their key features, benefits, and a comparative analysis against the ITT methodology 3) address their contributions to rapidly evolving business landscape.

Literature Review of Innovation methods

Lean start-up

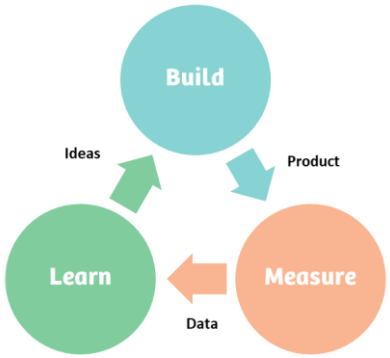

Figure 1: Visualization of the Lean Startup methodology [1]

The Lean Startup methodology is inspired by agile software development practices and aims to develop a Minimum Viable Product (MVP) through short design cycles [Figure 1]. It emphasizes validated learning and innovation accounting and follows a build-measure-learn-feedback loop. Advantages of the lean startup method include closer interaction with customers, rapid adaptations, shorter planning horizons, the ability to respond to market opportunities and a focus on specific market segments. Disadvantages include unfinished products due to frequent changes, demotivation, and loss of patience for continued testing, rejection of good ideas and short product life cycles [1-3].

Blue Ocean Method

The Blue Ocean Method [Figure 2] focuses on identifying untapped market areas and creating new value for customers. It requires a shift in thinking, the use of practical tools and a people-centered approach. The benefits of the Blue Ocean Method include identifying uncontested markets, expanding profitability and demand, value innovation and practical, data-driven actions. Disadvantages include competition from other players entering the new market, the need for patience and preparation, challenges in the early stages of market entry and the lack of a formula for success [4-7].

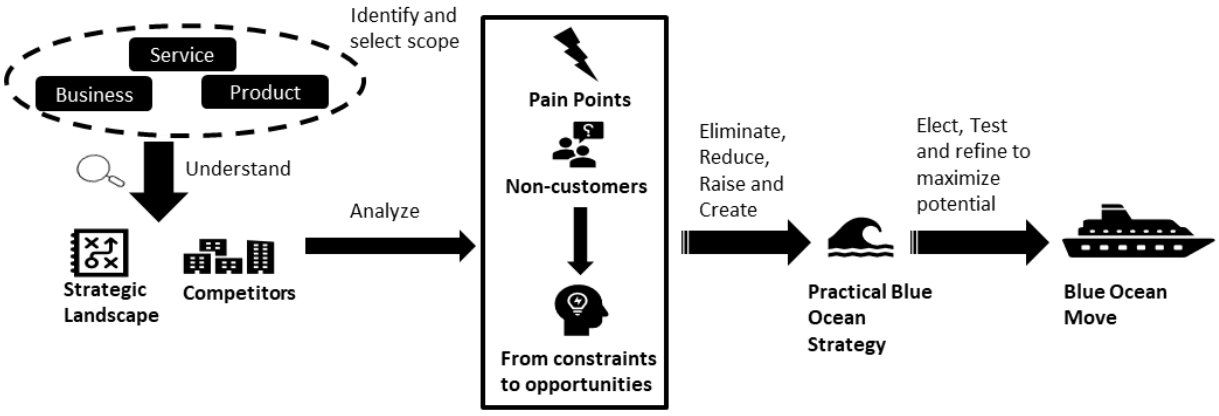

Figure 2: Schematic representation of the process flow for the Blue Ocean method [5].

Open Innovation

Open Innovation is the use of external knowledge and collaboration to accelerate internal innovation and expand markets. It involves opening up the innovation process to stakeholders outside the company [Figure 3]. Advantages include a large input of ideas, lower costs, increased product viability, risk reduction, improved brand perception, potential partnerships, and talent acquisition. Disadvantages include the risk of externalizing innovations without proper evaluation, challenges in finding the right target audience, diminishing returns over time, difficulties in process implementation, negative attitudes or quality concerns, problems with engagement and participation, and ownership disputes [8-11].

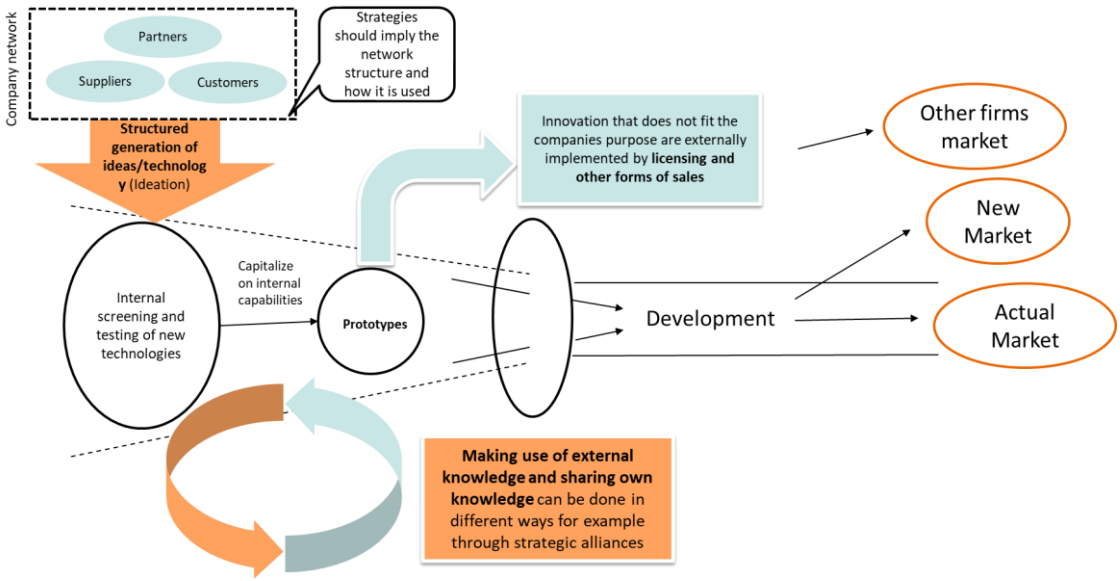

Figure 3: Visualization of open innovation methodology [9].

Co-creation

Co-creation is a collaborative development process [Figure 4] involving experts and stakeholders to create new value together. The benefits of co-creation include stronger brands, increased brand loyalty and awareness, better customer insights, new and unexpected ideas, expanded intellectual resources, cultural advantages and better market positioning. Disadvantages include strategic, operational and structural challenges, collaboration issues, maintaining participation and motivation, ensuring the provenance of participants and ownership concerns [12-15].

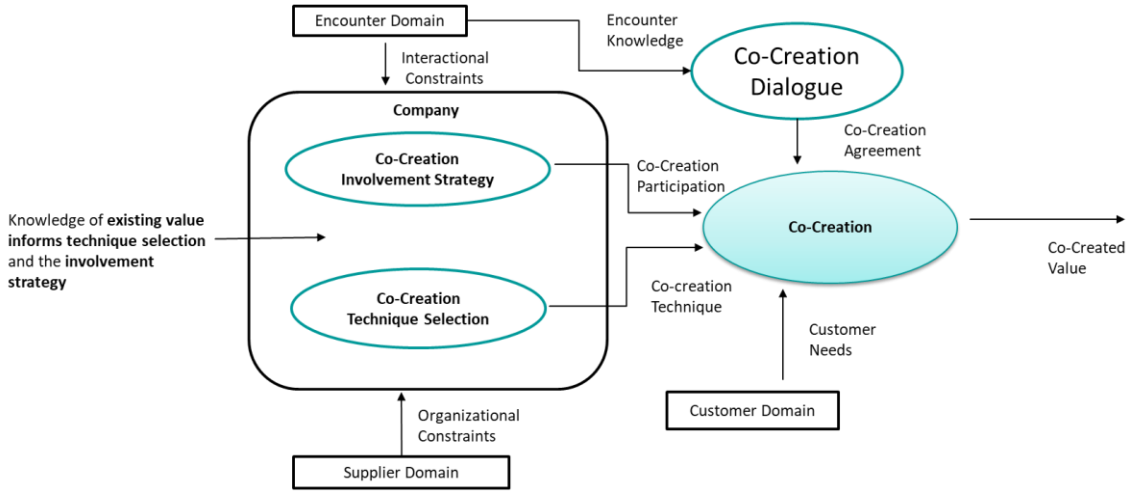

Figure 4: Depiction of the Co-creation approach [1].

Design Thinking

Design thinking is a non-linear, iterative process [Figure 5] that teams use to understand users, redefine problems and develop innovative solutions. It involves empathizing with users, defining core problems, developing ideas for alternative solutions, prototyping, and testing prototypes. The advantages of design thinking include facilitating solution adoption, strong engagement of end-users, iterative design for testing and modification, and fostering an innovative culture. Disadvantages includes relying more on anecdotes than data and privileging the designer above the users. [16-21]

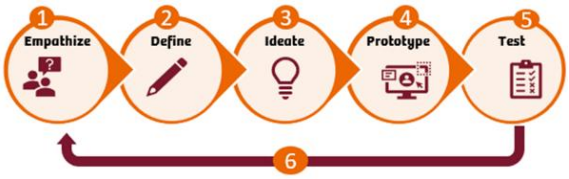

Figure 5: Illustration depicting the Design Thinking Process [20]

Agile

Agile methodology is a mindset characterized by values and principles that encourage incremental and iterative development, flexibility and constant feedback. It organises work in a prioritised backlog and encourages adaptive planning [Figure 6]. The benefits of Agile include the ability to respond to changing requirements, constant feedback from end users, collaboration and transparency, early delivery of value and improved quality. Disadvantages include the need for experienced practitioners, possible resistance to change, challenges in scaling Agile and difficulties in long-term planning [22-24].

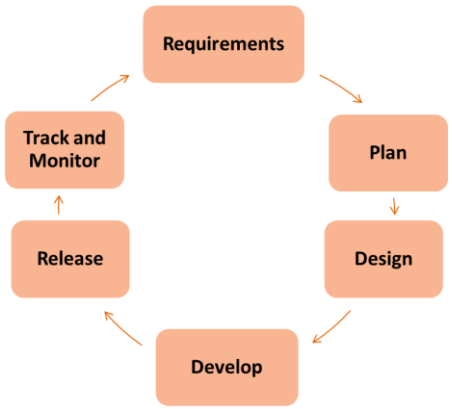

Figure 6: Iterative process employed in the agile methodology [22]

Scrum

Scrum is an iterative software development methodology [Figure 7] and a subset of Agile that is popular for managing complex projects. It provides a framework for managing complex projects by encouraging flexibility, collaboration, and adaptive planning. Scrum is widely used in the software industry but can also be applied in other areas.

At its core, Scrum emphasizes the iterative delivery of working software or product increments within short periods of time called sprints, usually lasting one to two weeks. At the heart of the methodology are self-organizing, cross-functional teams that work together to achieve project goals. The Scrum methodology offers several benefits, including increased transparency, improved team accountability, agility, and a focus on continuous improvement. However, it also brings challenges, such as expanding the scope of the project, the need for experienced and committed team members, the dependence on a competent Scrum Master and the need for precise task definition. Companies considering adopting Scrum should carefully weigh these pros and cons to determine if it is right for their projects and teams [25-27].

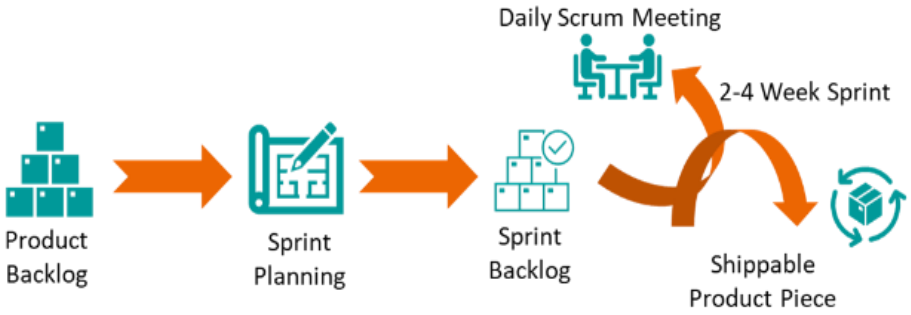

Figure 7: Process diagram of Scrum, which is a subset of Agile method [25].

TRL method

The Technology Readiness Level (TRL) method is a systematic approach to assessing the maturity and readiness of a technology during its acquisition and development phases. Originally developed in the 1970s by National Aeronautics and Space Administration (NASA) for technologies used in space exploration, the TRL method has become widely used in various industries as a measure of technological progress. The TRL method assigns a numerical value from 1 to 9 to indicate the level of technical maturity of a technology [Figure 8]. Each level represents a specific stage in the technology's life cycle, with 1 being the lowest level of maturity and 9 indicating a technology that is fully mature and ready for deployment. The TRL method has several advantages. First, it provides a structured and standardized approach to assessing the maturity of technologies, allowing for easy comparison and evaluation. Secondly, TRLs facilitate effective communication and collaboration between different stakeholders as they provide a common language for discussing [28, 29].

Figure 8: Procedural sequence of the TRL (Technology Readiness Level) methodology [28].

Literature Review of Innovation Tools

Business Model Canvas:

The Business Model Canvas is a visual tool that helps companies define and analyze the components of their business model, including customer segments, value propositions, distribution channels, revenue streams and cost structure [Figure 9] [30-32].

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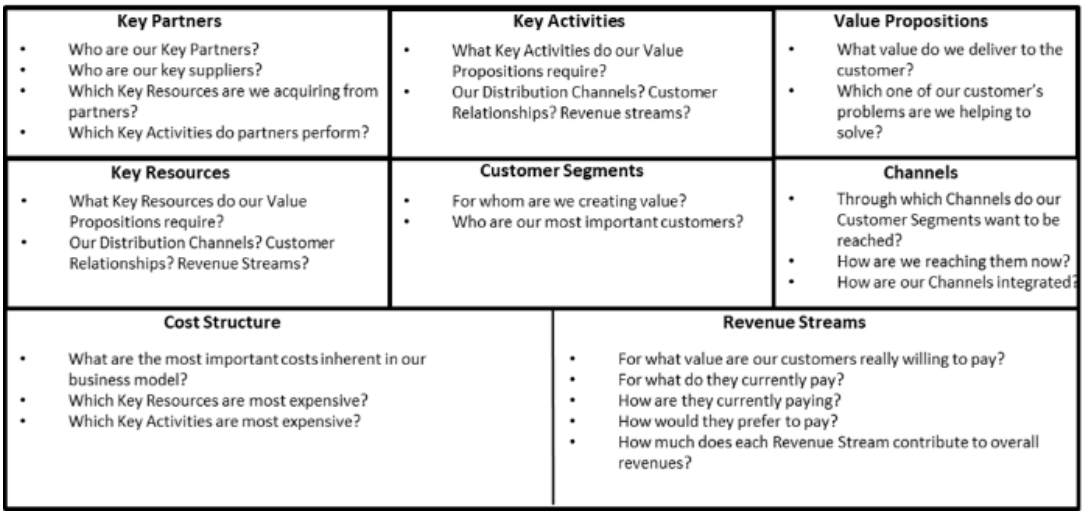

Figure 9: Visual representation detailing the components of the business model canvas [32].

PESTEL Analysis:

PESTEL analysis is a strategic tool for assessing the external macro-environmental factors (political, economic, socio-cultural, technological, environmental, and legal) that may affect a company's business environment [Figure 10] [33].

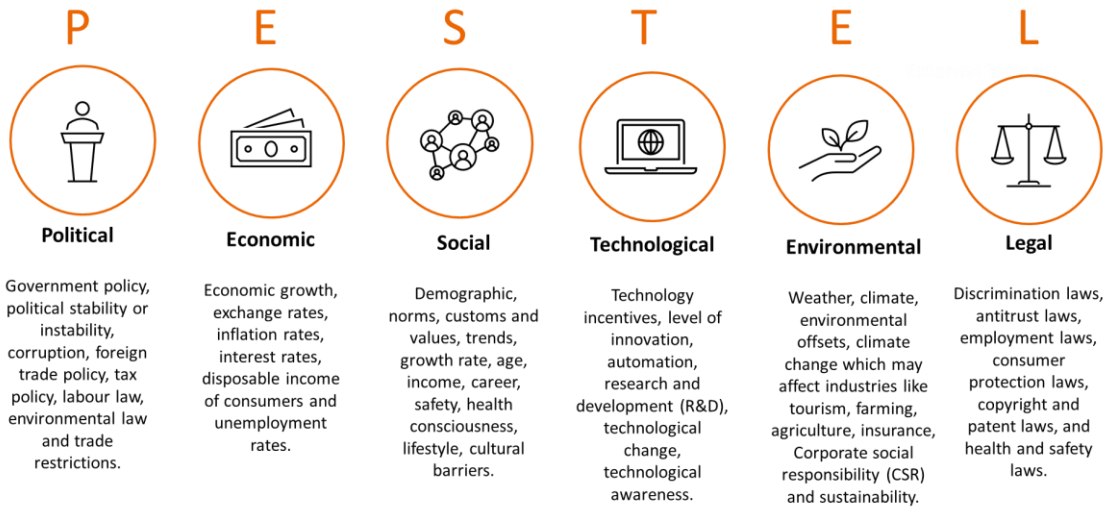

Figure 10: Graphical representation of the factors of the Pestel situation analysis tool [33].

SWOT Analysis:

SWOT analysis is a framework for assessing a company's internal strengths and weaknesses as well as external opportunities and threats [Figure 11]. It helps identify areas of competitive advantage and areas in need of improvement [34].

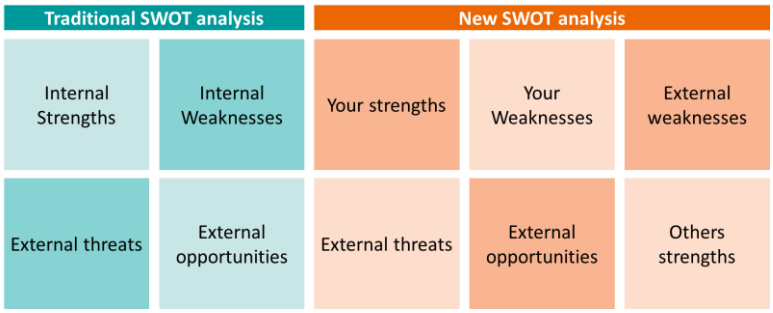

Figure 11: Framework of SWOT analysis [21].

Porter's Five Forces*:*

Porter's Five Forces is a tool for analyzing competitive forces within an industry, including the bargaining power of suppliers, buyers and new entrants, the threat of substitute products or services, and the intensity of competition [Figure 12]. It helps companies understand the attractiveness and profitability of an industry [35].

Figure 12: Components comprising Porter's Five Forces framework [35].

Porter's Value Chain:

Porter's Five Forces is a tool for analyzing competitive forces within an industry, including the bargaining power of suppliers, buyers and new entrants, the threat of substitute products or services, and the intensity of competition [Figure 13]. It helps companies understand the attractiveness and profitability of an industry [36].

Circle of Influence:

The Circle of Influence tool helps individuals and organizations identify and focus on the areas where they have control or influence. By understanding and prioritizing these areas, they can effectively target their efforts and achieve the desired results [Table 1] [38].

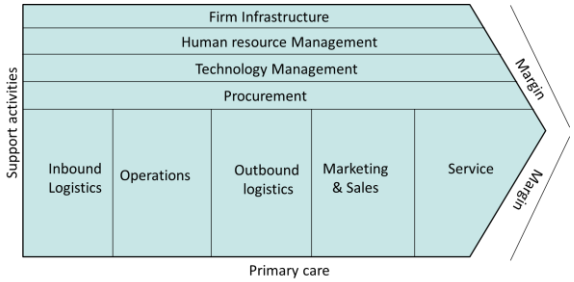

Figure 13: Porter's Value Chain [36].

	Description	**Example**
Circle of Concern	The "Circle of Concern" includes the wide range of concerns you have in the world, your work and life – including health, family, finances, the economy, national debt etc. Everything you include inside the circle is a concern and matters to you and everything outside the circle is of little or no concern to you.	Global warming, the state of the economy, the clothes your children want to wear, attitudes in society, the organization you work for, the things your colleagues do, the way people drive their cars etc.
Circle of Influence	Your Circle of Influence are the things that concern you that you can do something about. For example – you may be worried about the economy or climate change or coronavirus (i.e. circle of concern), however what can you do about it (i.e. your circle of influence)?	Teaching coworkers how to improve actions, sharing information about how to recycle, etc.
Circle of Control	Things we have within our direct control, for example: actions and responses	Our own actions, behaviors, planning, personal health routine, where you live, and the company you work for.

Table 1: Elements of the Circle of Influence tool [37].

Leadership Styles:

Leadership styles are different approaches and behaviors that leaders use to influence and lead their teams. Understanding different leadership styles, such as autocratic, democratic, transformational or servant leadership, can help create an environment conducive to innovation [Figure 14] [38].

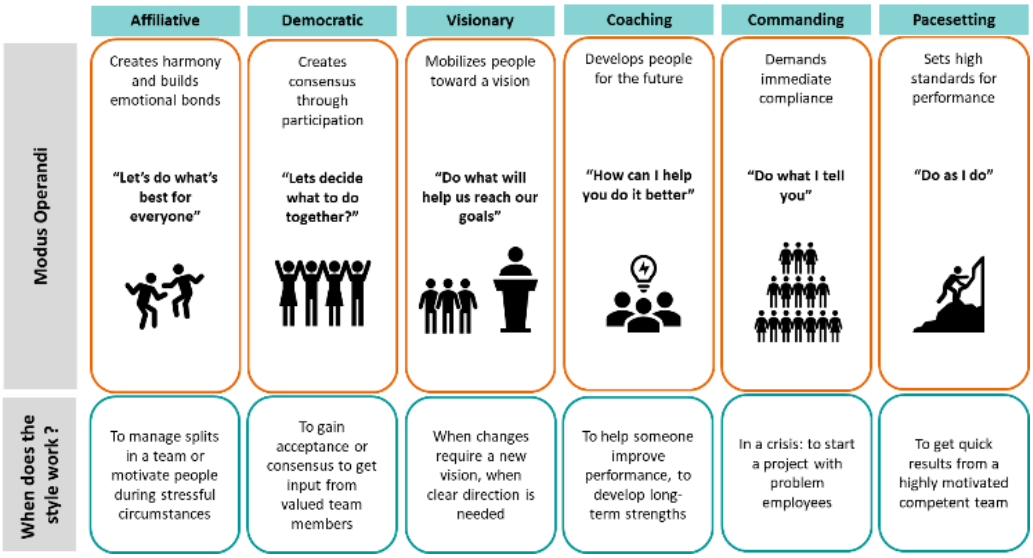

Figure 14: Illustration explaining various leadership styles [38].

Interviews:

Interviews are a qualitative research method used to gather insights and perspectives from individuals. Conducting interviews with customers, employees, experts, and stakeholders can provide valuable input for innovation initiatives [39].

Stakeholder Matrix:

A stakeholder matrix is a visual tool that helps identify and analyze stakeholders based on their influence and interest in an organization or project [Figure 15]. It helps to understand the dynamics of stakeholders and to effectively involve them in the innovation process [40].

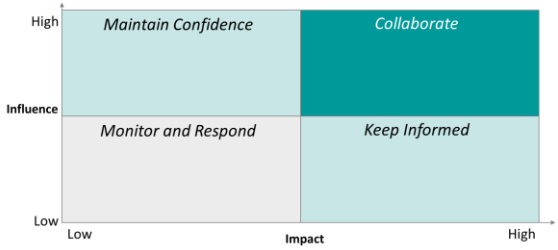

Figure 15: Matrix depicting the mapping of stakeholders [40].

Business Plan:

A business plan is a comprehensive document that sets out a company's objectives, strategies, and financial projections. It provides a roadmap for innovation initiatives and helps secure resources and stakeholder support.

Typical elements of A Business Plan include but are not limited to executive summary, company description, market analysis, competitive analysis, description of management and organization, breakdown of products and services, marketing plan, sales strategy, request for funding and financial projections [41].

BCG Growth-Share Matrix:

The BCG Growth-Share Matrix is a portfolio analysis tool that categorizes products or business lines based on their growth rate and market share [Figure 16]. It helps companies allocate resources and prioritize investments in different areas [42].

GE McKinsey Matrix

The GE McKinsey Matrix is a strategic tool for evaluating business units based on their market attractiveness and competitive strength [Figure 17]. It helps in portfolio management and decision-making on resource allocation and divestment of business units [43].

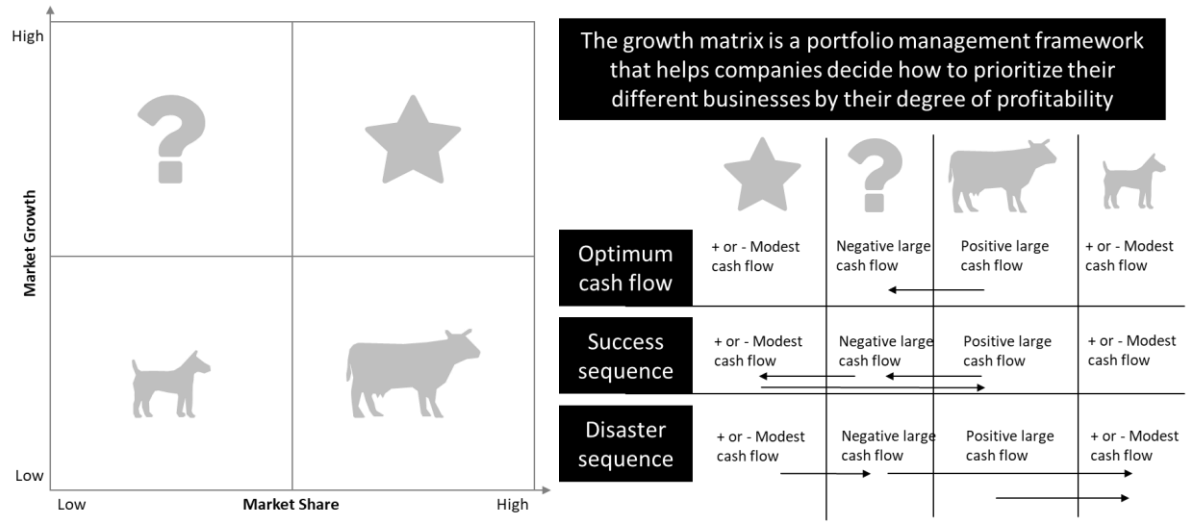

Figure 16: Structure of the Growth Share Matrix framework [42].

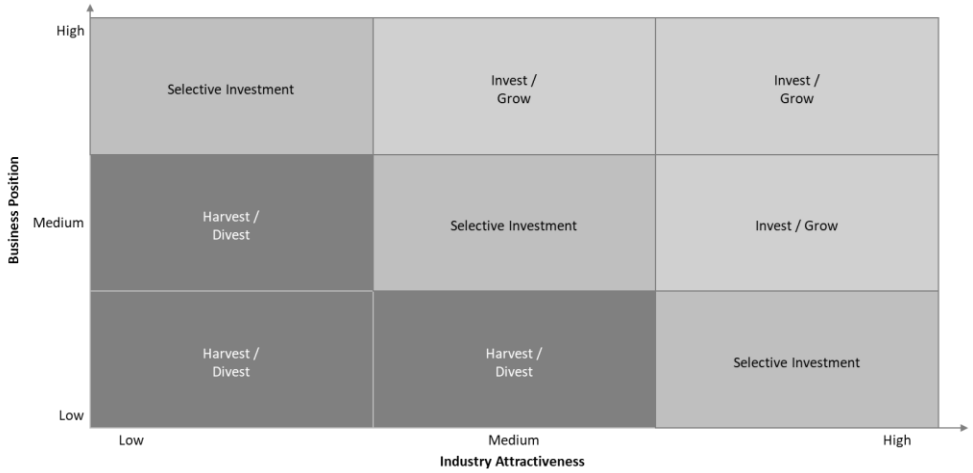

Figure 17: Illustration of the GE-McKinsey nine-box matrix [43].

Method and materials

Innovation Think Tank Methodology

The Innovation Think Tank Methodology - enables innovation across the product lifecycle in 4 steps [Figure 18].

1) Acquire Mandate, as the name suggests, emphasizes the importance of defining the right project scope to maximise impact. It connects the dots between different events, the results of previous projects, the voices of key opinion leaders, decision-making and results orientation, creating project contacts that already contain a project roadmap defined by the team.
2) The creation of big picture underlines the importance of a holistic view and includes observation of the customer environment and visualisation of the life cycle.
3) A concept/decision proposal could be an MVP, a prototype or a business plan and leads to portfolio mapping, a roadmap and a vision, as well as the acquisition of further contracts.
4) The deploy and commercialization step can take place within the host company's R&D teams or with a supplier or start-up created from within the company. Early engagement with the investor ecosystem is done with stakeholders.

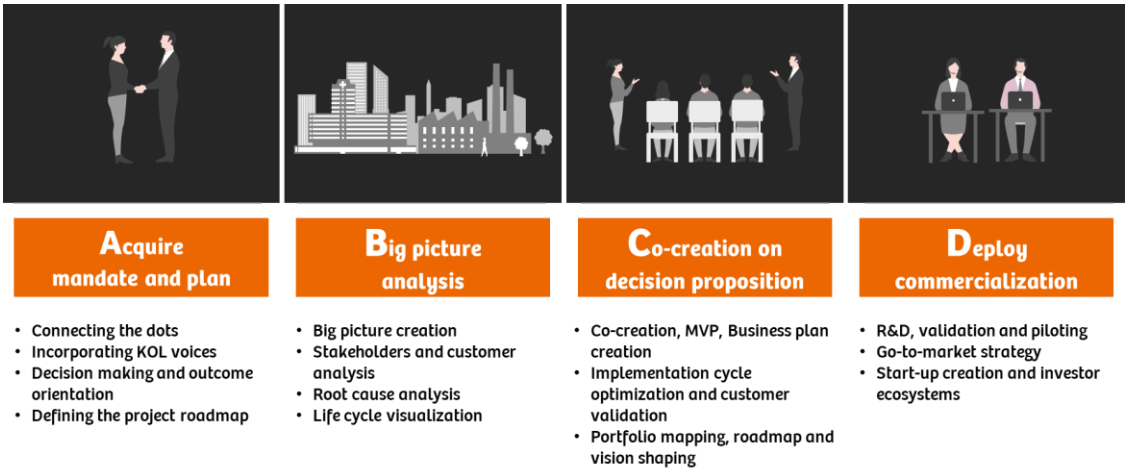

Figure 18: Innovation Think Tank Methodology (ITT training) [44].

Innovation Think Tank Methodology tools

Innovation Think Tank methodology has been developed by Prof. Sultan Haider based on his experience of leading and implementing more than 2500 R&D and strategy projects at various Siemens Healthineers locations and customer sites such as hospitals, universities and ministries of health worldwide. The ITT methodology tools have been developed on the course of delivering these projects and optimized based on the feedbacks received from various project stakeholders.

Brainstorming

Brainstorming is an excellent means of generating new ideas if it is done systematically. The aim of brainstorming activities during Innovation Think Tank trainings is to get ideas on trends, technologies and challenges that affect the health system. Participants are tasked with spending no more than 30 minutes on the activity. They simply start by adding items to a list based on their personal experience or perspective, or even internet research. It is important to note that there is no right or wrong in brainstorming as participants simulate their brains and build a bigger picture of the trends, challenges and technologies or anything that affects the health system.

KOL Voices

Key Opinion Leaders (KOLs) are influential figures known for their expertise in a particular field. They may be C-level executives, heads of departments, ministers and people in other leadership positions, etc. In ITT training, the purpose of soliciting input from KOLs in the health sector is to examine trends, address challenges and identify critical focus areas in the sector. Participants are collectively tasked with consolidating testimonies from KOLs, whether from their personal experiences, online sources or recent interviews, which are documented with relevant references. These findings can be presented in a template [Figure 19] that includes the picture, name, title and affiliation of the KOL and should take no more than 20 minutes to complete.

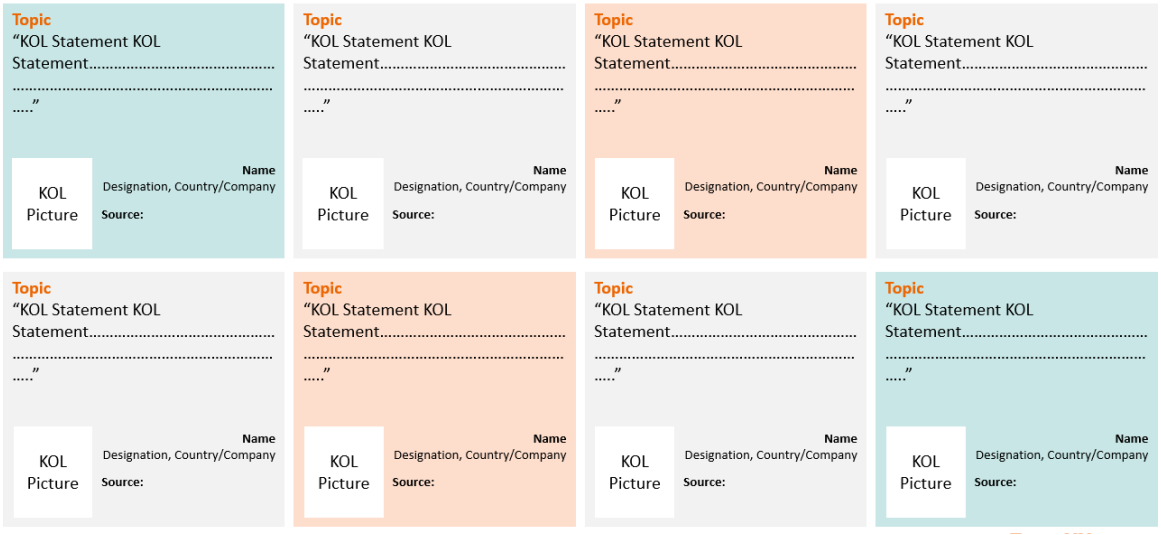

Figure 19: Template for presenting KOL voices, with the KOL's image, title, name, and affiliation (ITT training).

Facts and Figures

The facts and figures components are used to highlight precise information that may take the form of statistics, statements or other quantifiable data. During ITT training, participants are tasked with gathering relevant data related to a specific area within their project workflow that their team wants to address. These facts and figures from the health sector can be obtained through internet research, with proper citation of sources. These findings can then be presented visually for documentation purposes, and the time allocated for this task should not exceed 20 minutes. The aim of collecting facts and figures is to illustrate the seriousness of the problem and to support the proposed solutions with figures. Example template for documenting the facts and figures can be found in the various disease pathways published on the ITT Webpage [44].

Stakeholder pain point analysis

Stakeholder analysis in health care is about examining the challenges faced by different stakeholders and putting together possible solutions. During the ITT training, participants work in teams to create a list of stakeholder pain points relevant to their chosen topic using an Excel or PowerPoint template [Figure 20].

As a first step, they can categorise stakeholders according to the following criteria: 1) Disease pathways or ologies 2) Health economics 3) Product life cycle 4) Operations 5) The health system. Participants are also given examples of healthcare stakeholders such as patients, family members, doctors, specialists, imaging centres, nurses, different types of hospitals, insurance companies, ministries of health, ministries of education, science and technology, medical device manufacturers, start-ups and venture capitalists, etc.

Next, participants need to briefly describe the pain points collected for the listed stakeholders, how the pain point can be solved and identify patterns and interdependencies in all the proposed solutions. Based on the interdependencies, they can group related solutions under a single keyword to form solution clusters that can be offered as a package. The solution clusters with the most proposed solutions are selected as the top three. The time frame for the whole process is 120-minute.

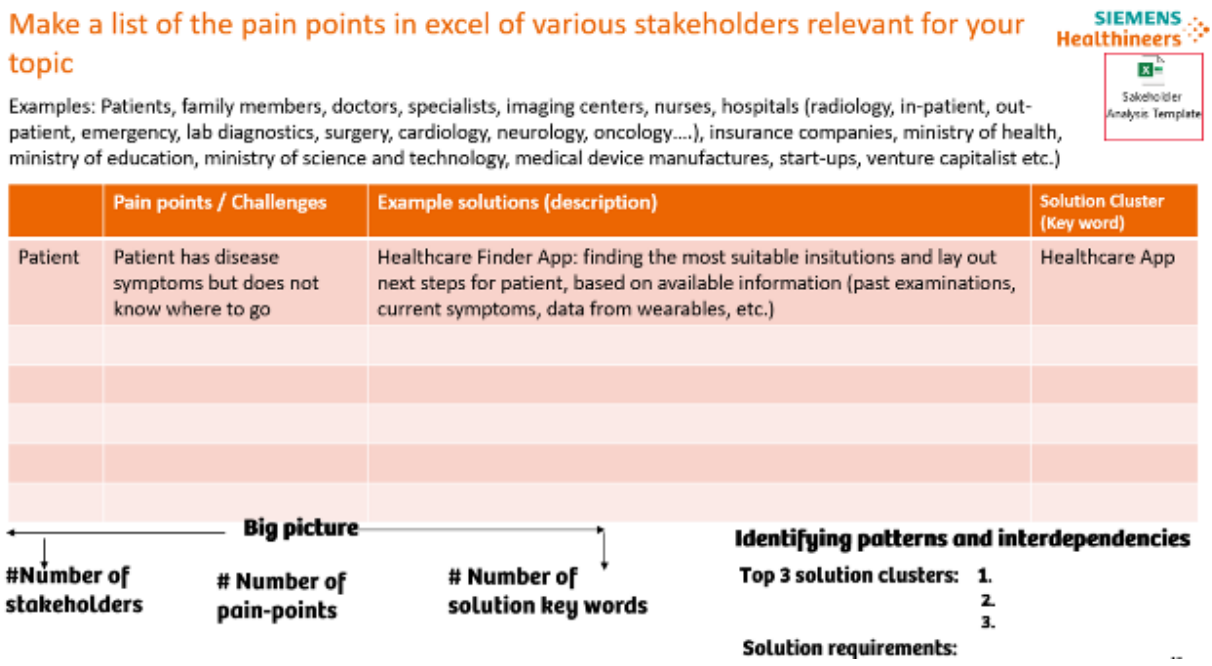

Figure 20: Template for listing stakeholders, their pain points & potential solution clusters and choosing the top three solution cluster (ITT training).

Value rating

The value matrix is used to identify deep dive issues by rating solution scenarios using a value rating system represented by coloured dots on the matrix as blocks [Figure 21]. These block colours can be used as any indicator. There are three dimensions that are used to evaluate these solutions: 1) The potential impact of the idea, 2) The category of the solution based on products & services along the value chain, indicated by the color of the block. 3) Estimation of the effort required, taking into account factors such as budget and resources needed.

The deep dive topics for participants are selected from those that fall within the rectangle on the matrix, as shown in [Figure 21]. This process is a collaborative team exercise and should be completed within a 15-minute time frame.

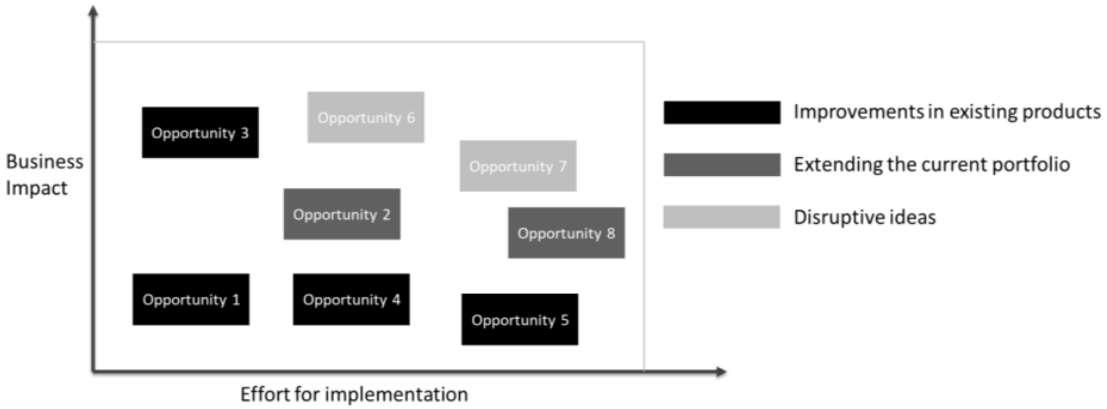

Figure 21: Value rating matrix template which indicates the dimensions used for evaluating solutions (ITT training)

Solution Scenario template

After the final identification of the three most important solution clusters from the value matrix, the participants are given the task in teamwork to elaborate these identified solutions using a solution scenario development template. They have a time frame of 90 minutes for each solution. The first step is to create a title for the solution scenario, which should be self-explanatory and summarise the central problem statement, the solution and the expected impact.

They then need to describe the motivation or challenges and key words for the pain points of a solution cluster. They should also describe the current state of the art in the market, including solutions from Siemens, different regions, industries, competitors, etc. The next step is to briefly describe how the scenario addresses the pain points of the solution cluster and list the steps that might be needed to implement the idea, including the key aspects to consider.

Participants must then list in separate sections the key specifications of the solution, the business impact of the solution scenario on the market and the customer benefits. Participants must then estimate how much time will be needed to implement the idea and provide an estimate of the budget required. This template [Figure 22] must be followed for all three solution clusters

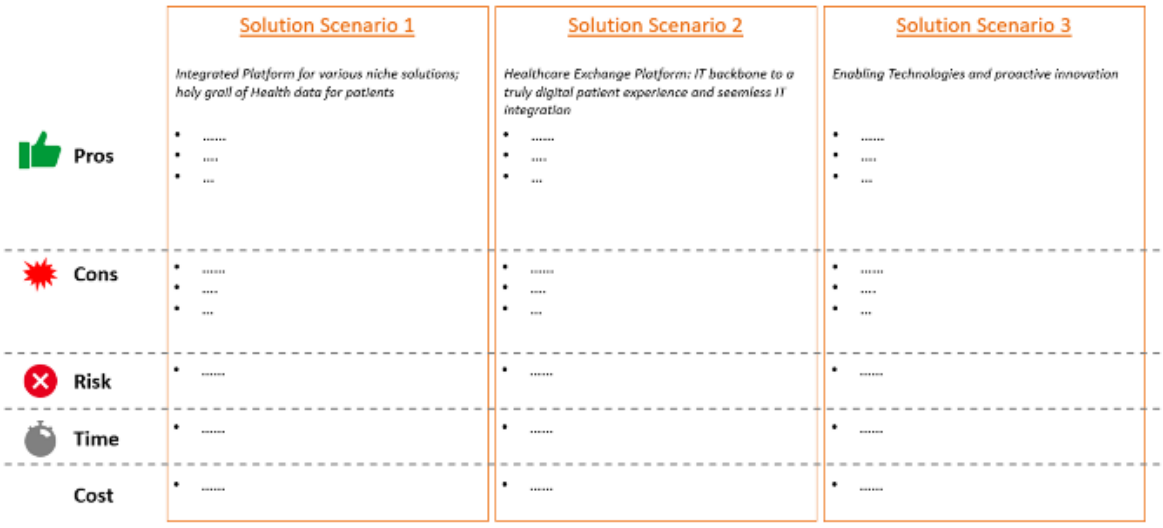

Figure 22: Solution Scenario development template to elaborate a solution scenario based on the solution clusters.

Business case

Developing a business case is about evaluating a proposed solution to decide whether it can be implemented. Participants are tasked with working in teams to develop a business case that summarises the 3 scenarios on one page and includes decision points, including an assessment of costs, time, potential risks and other factors related to the three solution scenarios [Figure 23]. They should briefly describe the solution scenarios in 3 sections and list the advantages and disadvantages for each solution scenario in a comparative manner. They should also mention the main risks, the time required and the cost of implementing the solution. Colour coding in the text to show advantages and disadvantages is encouraged. This process serves to document the rationale for implementing these solutions

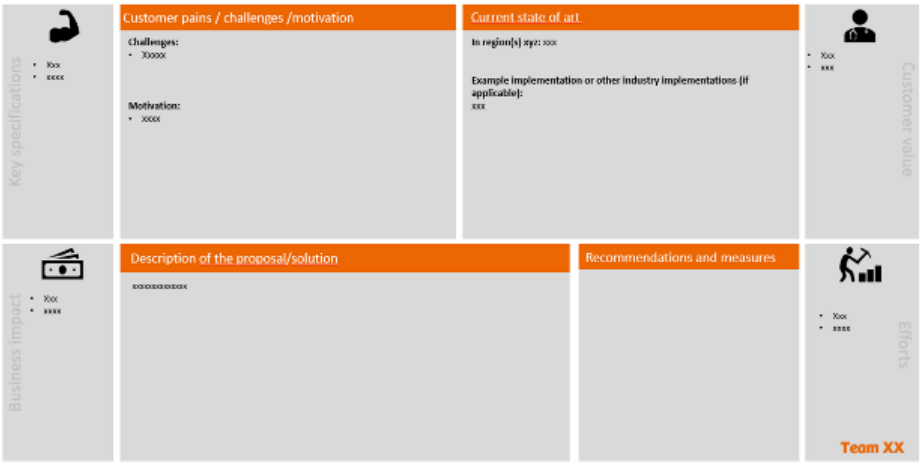

Figure 23: One pager business case development template, providing decision points to evaluate and compare the three solutions.

Innovation Think Tank Prototyping Framework

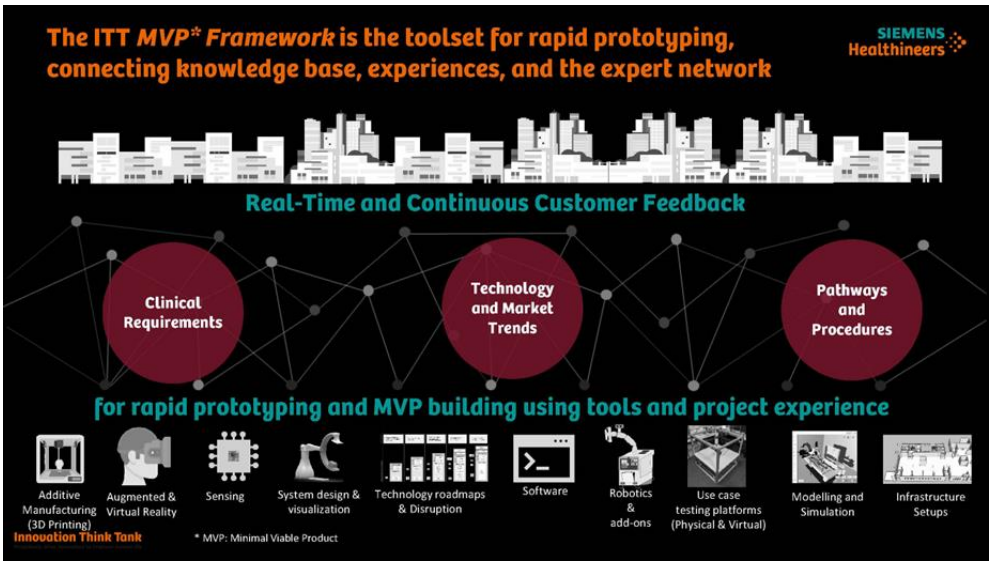

Figure 24: Innovation Think Tank Prototyping Framework for creation, testing, and validating MVPs in a customer environment equipped real-time customer feedback and ITT tools [45].

An Innovation Think Tank Prototyping Framework (ITT PF) [Figure 24] that consists of various technology elements from the global ITT infrastructure, was developed by analyzing various past projects and 17+ years of experiential learning based on customer interaction. ITT PF relies on real time customer feedback for insights from various healthcare stakeholders which helps in getting accurate product definitions, product enhancements and need-based working mandate.

ITT PF has two working modules, one at ITT customer sites around the world and another at the ITT site with trans-disciplinary teams, where the team extracts technology trends, update knowledge of clinical pathways and practices, identify pain points and validate new products at customer sites, all these resulting in improved customer usability, better patient outcomes, increased market reach, cost reduction, improved sustainability, increased customer satisfaction, and superior financial performance. Second module which is technology tool driven, including additive manufacturing, AR-VR, Sensing, System design & visualization, robotics & add-ons, modelling & simulation, infrastructure set-ups, and technology roadmaps & disruption plays significant role in MVP creation and prototyping individually and in-combination as well. [For more details refer to white paper, Innovation Think Tank Prototyping Framework with real time customer feedback during MVP creation and validation]

ITT capacity building programme: Applying the ITT methodology

The ITT Capacity Building Programme is an interactive learning programme that aims to train creative pioneers capable of delivering innovative and client-centred solutions to the world's greatest healthcare challenges in their own professional field. This experiential learning technique is based on the extensive expertise of Prof. Sultan Haider, who has built and led numerous interdisciplinary innovation projects/infrastructures worldwide.n this intensive 5-day programme, the first day is for programme orientation, where participants are trained in ITT methodology and innovation leadership. Participants are divided into teams and receive a briefing on their task: brainstorming on trends, technologies and challenges impacting the health system, collecting and analysing input from Key Opinion Leaders (KOLs) and relevant facts and figures. Days 2 to 4 are dedicated to experiential learning, with participants actively engaged in various project work in the field of healthcare. Team presentations of group work sessions will also take place during this time, followed by joint feedback sessions.

Day 2 - Inspiring presentations from experts and KOLs provide participants with insights into the key healthcare challenges in the region and opportunities for innovation. Participants are then trained to use the stakeholder pain point analysis tool to identify the challenges faced by different stakeholders. They also have to group potential solutions and apply a

value rating system to identify the three best clusters of solutions.

Day 3 focuses on developing solution scenarios and visualising them using the given templates. Day 4 is about creating concise one-page business cases for the three solutions and preparing an elevator pitch with a roadmap and key findings. On the final day, Day 5, the teams present actionable proposals to address real-world challenges in healthcare to a panel of industry and academic experts, followed by feedback sessions and an exciting panel discussion with healthcare industry experts.

Results:

ITT has conducted more than 175 capacity building programmes worldwide in countries such as the USA, Germany, Canada, India, China, the UK, Australia, the United Arab Emirates, Saudi Arabia, Turkey and many others, training more than 3000 participants, including students, professionals, researchers as well as executives.

The testimonials from the participants were clustered into various categories and the summary and key learnings from the ITT capacity building programs were consolidated together for a clear understanding of the impact of the ITT methodology and tools in the healthcare innovation space.

Diversity, Collaboration and networking:

- The ITT methodology takes into account the diversity within the team and improves problem solving through a holistic perspective.
- This experiential learning programme is an enriching experience as it allows learning from both the trainer and the other participants.
- Working with people with different skills, cultures and locations encourages thinking in new dimensions.
- Different backgrounds contribute to effective viewpoints during brainstorming sessions.

The training provides an opportunity to network and collaborate with talented individuals from different backgrounds.

Holistic Approach:

- ITT methodology emphasizes taking a holistic view before making decisions.
- Visualizing the big picture helps in understanding the environment and finding effective solutions.

Trust and Values:

- ITT cultivates trust and reflects company values, promoting collaboration across Siemens Healthineers' businesses.
- Trust among team members is crucial for successful teamwork and innovation.

Mandate and Credibility:

- Securing a mandate and building/maintaining credibility are vital for success.9
- Trust from Prof Haider provided the mandate to work collaboratively.
- Innovation involves more than just ideas; obtaining a mandate is key.

Application and Transferability:

- The learned methodology is transferable to various usecases with confidence.
- Templates and processes introduced in the training are valuable for future projects and initiatives.

Problem Solving and Creativity:

- Encouragement of creativity and hands-on learning leads to innovative solutions.
- Working with templates allows to spend more time on intrinsic creativity.
- Creating physical models/ big picture helps to identify the root causes of the problems in a pragmatic manner.

Customer and Stakeholder Focus:

- ITT framework aids in establishing trust with customers/stakeholders.
- Visualizing the problem statement demonstrates understanding and commitment to finding solutions.
- Concise presentations and business cases highlight the value to Siemens Healthineers.

Efficiency and Time Management:

- Learning to work efficiently within allocated timeframes is crucial.
- Importance of determining scope and clarifying objectives for focused work.

Moderator's Role and Communication:

- Moderators play a key role in clarifying misunderstandings and facilitating productive discussions.

Continuous Learning, Knowledge Sharing and Application:

- Incorporating the ITT methodology and templates into daily work encourages innovation.
- Applying learned concepts beyond the training setting.

Influence of KOLs and Different Perspectives:

- KOL voices offer guidance and solutions.
- Embracing different viewpoints leads to diverse and effective solutions.
- Interaction with KOLs enriches knowledge and informs challenges and solutions.

Below are some examples of testimonials from more than 3000 participants about their key learnings from the programme.

*"The ITT methodology defines the steps which allows us to look at a **holistic view** (Big Picture) before taking any decisions."*

*"The training gave us an opportunity to work with people with different **skills**, which helped us to think outside the box for the topic in hand."*

"The examples shown in the training were very relatable and sparked thoughts for each one of us on how we can do something like this in our respective business areas."

*"The **trust** that Prof Haider showed us gave us a **mandate** to work as a team."*

*"The training gave us an opportunity to work with people with different **skills, cultures, locations, and knowledge**, which helped us to think outside the box for the topic in hand."*

*"Agreed to and clarified scope, which allowed us to **focus on the task** at hand."*

*"Criticality of **obtaining the mandate** and building AND maintaining **credibility** are essential to success."*

*"Learned to **work efficiently** in the time allotted."*

*"The methodology practiced can be translated to our **respective workstreams** with **confidence**."*

*"The **examples shared** were related to individual workstreams: interaction with others, especially."*

*"Sometimes you have to know how to **read between the lines** to understand when a mandate is received."*

***"KOL voices** help **inform** an ITT team of **the challenges**, but also may suggest an ideal solution for them."*

*"Innovation is not just an idea. **Securing mandate is** the **key**."*

"KOL can be an idea generating guidance as well as idea checker."

*"Understanding that there are **different points of view** will make us see that there are **different solutions** in different ways."*

***"Develop** a **concise presentation**/ business case to help management see the value this adds to the overall Siemens Healthineers business."*

*"Learning the ITT **methodology** along with the supporting **templates** and offers for further support from **ITT staff**."*

*"Starting to determine how to **apply** this ITT **methodology** to our work areas."*

*"The ITT process (and this class) encourages **creativity**, **thoughtfulness**, and **hands-on** learning and **communication**."*

*"The thoroughness and importance of the **KOL** and attention to figures to better conceptualize the problem and **solution**."*

*"Building a highly proficient and **trusting** team in a few days."*

*"The process, templates we used to in training are very useful and I believe we can use them for projects and other initiatives to **induce innovation."***

*"When brainstorming challenges and solution, a diverse background of participants can be more impactful than the point of view of a single person. **One doesn't need to be an subject matter expert to make an impact."***

"I liked how the ITT process opens your mind to think in a different way starting from the KOL without losing attention to the customer needs."

"The ITT framework provides a straightforward approach to establishing trust with your customer/stakeholder. Visualizing the problem statement goes a long way in showing the customer that you understand the environment and can work towards a solution."

"Templates are important to free your brain for content creation."

"I think it's also important the labor of the moderator, in which he/she could clarify any misunderstanding."

*"This training has provided an excellent **networking** opportunity. I was fortunate to work with some **talented** people with different backgrounds and skill sets who brought different perspectives to exercises."*

***"Trust** is an outcome of our Teamwork and a foundation for Innovation."*

Overall, the ITT methodology promotes collaborative problem-solving, emphasizes holistic thinking, and underscores the importance of trust, credibility, and customer focus. It encourages creative and efficient approaches to innovation, acknowledging the significance of diverse perspectives and effective communication.

Discussion

While each of the above methods and tools adds value to the innovation process, the Innovation Think Tank Methodology provides a comprehensive approach to innovation. It encompasses different phases of the product lifecycle and integrates the acquisition of the project brief, the linking of different sources of information and the use of acquired knowledge to shape portfolios, roadmaps and visions. By engaging early in the investor ecosystem and fostering collaborative decision-making, this methodology enables companies to take a holistic approach to innovation.

The Innovation Think Tank methodology goes beyond individual tools and methods to embrace a mindset that promotes cross-functional collaboration, hcustomer focus and adaptability. It recognises the importance of gathering insights from multiple sources, leveraging diverse expertise and aligning innovation efforts with strategic goals. By adopting this methodology, companies can improve their ability to identify and solve complex problems, create value for customers and drive sustainable growth.

Conclusion

Innovation methods and tools are essential for companies seeking growth and success. Each of the methods and tools discussed in this chapter offers distinct advantages in fostering innovation and achieving desired outcomes. However, the Innovation Think Tank methodology is characterized by a holistic approach that integrates multiple phases of the product life cycle.

By incorporating acquisition, big picture building, decision making and implementation, companies can foster a comprehensive and efficient innovation process that maximises impact and results. By applying appropriate methods and using the right tools, companies can position themselves as innovation leaders in their respective industries. The diverse methods and tools presented in this chapter enable companies to approach innovation holistically, to orient themselves to customer needs, to use external resources and to manage the complexity of the market. To drive innovation and achieve sustainable growth, companies should carefully select and adapt these methods and tools to their specific circumstances and objectives. By embracing innovation as a strategic priority and using these methods and tools, companies can stay ahead of the competition, create value for their customers and achieve long-term success. As the business landscape continues to evolve, companies that embrace innovation as a core competency will thrive, while those that overlook its importance will struggle to remain relevant. By continually exploring and adopting innovative methods and tools, companies can realise their full potential, foster creativity and collaboration, and shape a future that is both successful and impactful.

Author contributions

SH designed the ITT Methodology and as the base for the study, conceived the original idea, and supervised and supported the project with respect to Siemens Healthineers. MA, SPA wrote the paper with support from SH and CH. All authors contributed to the article and approved the submitted version.

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Disclaimer

The information shared in this whitepaper is not an all-inclusive or comprehensive picture of the innovation tools and methods and is a brief overview. The key purpose of this whitepaper is to provide a consolidated view of the various innovation tools and methods. There were no identified conflicts of interest for this study. Large language models were utilized for paraphrasing purposes only.

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