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Building Success Together

Design Thinking, Lean Thinking, and Empiricism: Transforming the Healthcare Industry With Innovative Technology

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The healthcare industry is constantly evolving, with new products, services, and procedures being developed daily to meet the medical needs of patients using the latest technology.

Healthcare providers continue to feel pressure to improve the quality of patient care while reducing the cost of healthcare products and services. Because of these challenges, healthcare professionals should forgo using traditional healthcare industry concepts that no longer serve their purpose and adopt a healthcare business model that features improved processes that better serve the present needs of the health industry.

The COVID-19 pandemic has put the healthcare industry under unprecedented scrutiny as healthcare systems around the globe struggle to meet consumer demand. Healthcare providers and manufacturers must focus on implementing a digital transformation strategy to meet these challenging expectations. Digital transformation has become a necessary and essential step toward meeting and improving patient care.

Creating products and services with new-age digital capabilities requires a business model that emphasizes value and results-based outcomes. Design thinking, lean thinking, and empiricism are three principles that help create efficient customer-centric processes and facilitate successful digital transformation within the healthcare industry.

Design Thinking

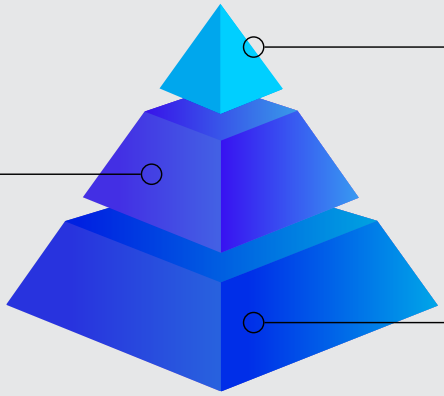
Design thinking is a process that helps teams develop creative and innovative solutions to problems by focusing on the needs of the consumer.

Lean Thinking

Lean thinking is an Agile approach to ideation that focuses on producing products that customers want quickly, efficiently, and with as little waste as possible.

Empiricism

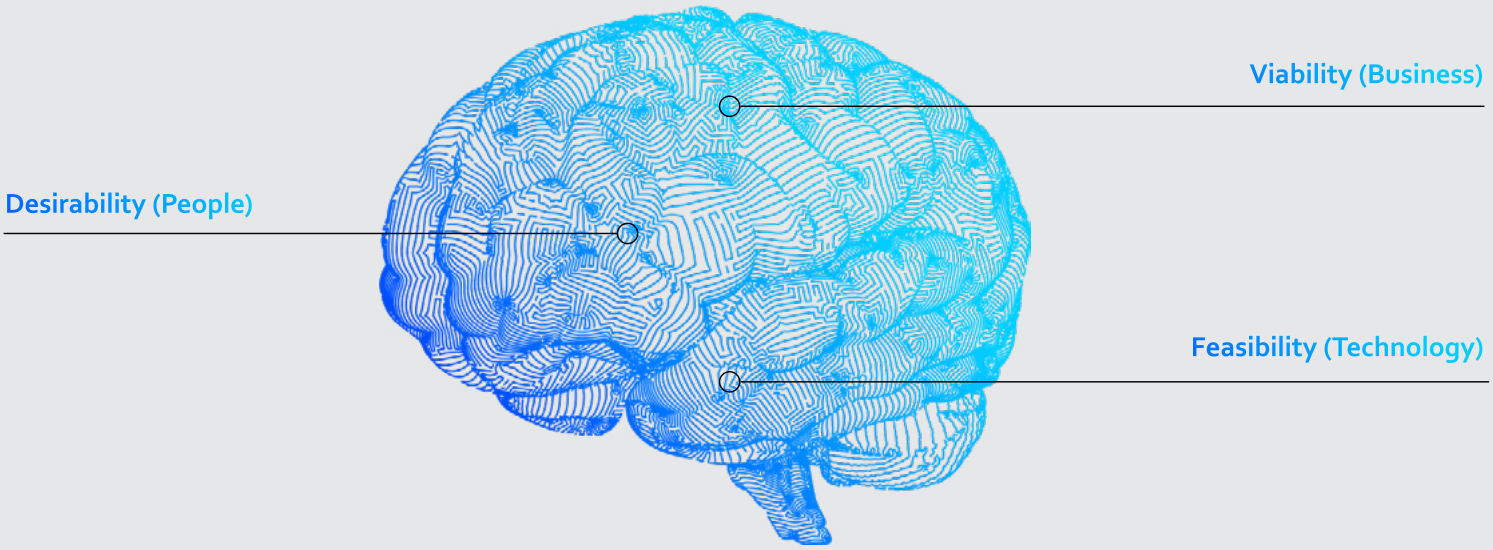
Empiricism is a philosophical approach that emphasizes the importance of gaining insight through observation and experience.



01
Design Thinking

A discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity."

- Tim Brown, Harvard Business Review, June 2008



Designers use metaphors, analogies, and other creative elements in the design thinking process to induce inspiration and examine problems in new ways with the goal of continuous improvement. They evaluate various aspects of an idea, including the following variables:

Desirability

A **people-focused** variable and describes the perceived value of a product or service.

Feasibility

A **technology-focused** variable that examines the technical aspects of the idea and determines the feasibility of what is possible while also identifying if the technology can be developed in the foreseeable future.

Viability

A **business-focused** variable that focuses on identifying whether the elements of a project are likely to contribute to a sustainable business model.

Nisum uses design thinking principles to:

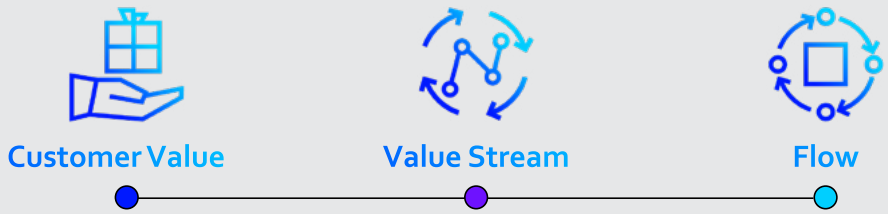
- Take a holistic view of the client's business and provide insight into the complex world of healthcare through the lens of technology.
- Provide knowledge, insight, and innovation that solve complex challenges by connecting the right teams to create workable custom solutions.
- Innovate and create change within the organization while considering consumer needs.
- Create value through custom digital solutions that enhance organizational quality, sustainability, and efficiency.

Design Thinking Goals

The innovation process includes information gathered from key stakeholders and uses techniques like journey mapping, story mapping, and prototyping to design potential solutions. Convergent techniques are then used to gain insights into the problems or unmet needs of the business. Product artifacts — ideas, high-level product backlog items, prototypes, and the product vision — are created during the design thinking phase; however, these artifacts do not directly translate into value for consumers.

02
Lean Thinking

Lean thinking is an Agile approach to business that focuses on creating value for customers with fewer resources and less waste. Agile practice involves a continuous process of repetitious experimentation to achieve customer value with zero waste.



Lean thinking can be broken down into three key principles:

Customer Value

This refers to the importance a customer places on a specific product or service. Customer perceptions of value are influenced by factors such as the timeline for manufacturing, delivery, and price point. It is important to also take into account consumer requirements and expectations.

Value Stream

A value stream is the set of actions that take place to add value to a customer from the initial request through the realization of value by the customer. After determining the customer value, one must prepare a value stream map and identify all opportunities to remove waste.

Flow

After removing waste from the value stream, the next step is to smooth the process flow toward the customer. This will ensure that there are no delays or interruptions and improves time to market.

At Nisum, we understand that your value stream mapping strategy changes depending on your environment. Customer value or perceived customer value, value stream, and flow are impacted depending on whether the end customer is involved in the manufacturing or production process. Below is a detailed breakdown of the variables involved with planning and implementing a lean thinking strategy.

	Variables	Customers Are Not Involved in Manufacturing the Product(s)	Customers Are Directly Involved in Manufacturing the Product(s) or Service(s)
Customer Value	Waste Defects	Manufacturing defects can be corrected, and the process may need to be repeated if the defect cannot be remedied.	Defects can lead to adverse events that are costly and irreparable.
	Waste Definition	Waste is anything the customer does not want to pay for and does not add value to the product or service.	The same activity that is considered waste in a manufacturing setting may not be considered waste from a healthcare perspective.
Value Stream	Consumption	Products or services are produced and consumed at a later stage.	Products or services are produced and consumed simultaneously.
	Basis of The Processes	This setting that does not involve customers is a work-based process.	Direct involvement by customers is an information-based process.
	Quality	The primary problem in manufacturing settings is the quality of the final product.	The primary problem in healthcare services is not the actual implementation of the process but the quality of information.
	Process Mapping	This methodology requires the mapping of workflow components.	Designing a methodology requires mapping the information flow to identify the components that add value.
Flow	Priority	This strategy involves giving priority to the workflow.	Priority is given to information flow using this strategy.

Goals of Lean Thinking

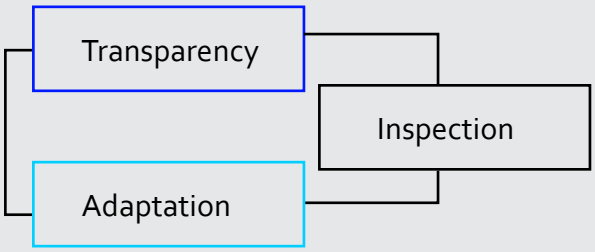
The goal of the lean thinking phase is to create a flow of activities from the value stream. Value streams can improve workflow and accelerate time to market, as they contain the activities, people, systems, and flow of information and material necessary to deliver customer value. This flow helps visualize the work required to produce solutions while identifying potential delays, bottlenecks, and handoff points.

Lean thinking plays an important role in improving the quality of healthcare products and services while emphasizing the end-user perspective. The key to lean thinking is that no matter how many times a process is improved, it can always be further enhanced. The idea of perfection rests on the notion of

continuous improvement through incremental change based on outcomes.

03 Empiricism

Empiricism is the belief that knowledge and evidence come from doing. As a practice, empiricism is basing your decisions on first-hand observations and experiences.



3 Pillars of Empiricism

Empiricism is a philosophy based on 3 pillars:

1.Transparency

The work process used in your organization must be visible to those performing the work as well as those receiving the work. Transparency enables inspection, which leads to better quality and less waste.

2.Inspection

Frequent, diligent monitoring of progress toward agreed goals is required to detect any undesirable variances or problems. This visibility enables the necessary adaptation of plans as observations arise. Providing an inspection without adaptation is not helpful and fails to provide feedback on whether a problem has been resolved or whether steps should be taken to prevent further problems.

3.Adaptation

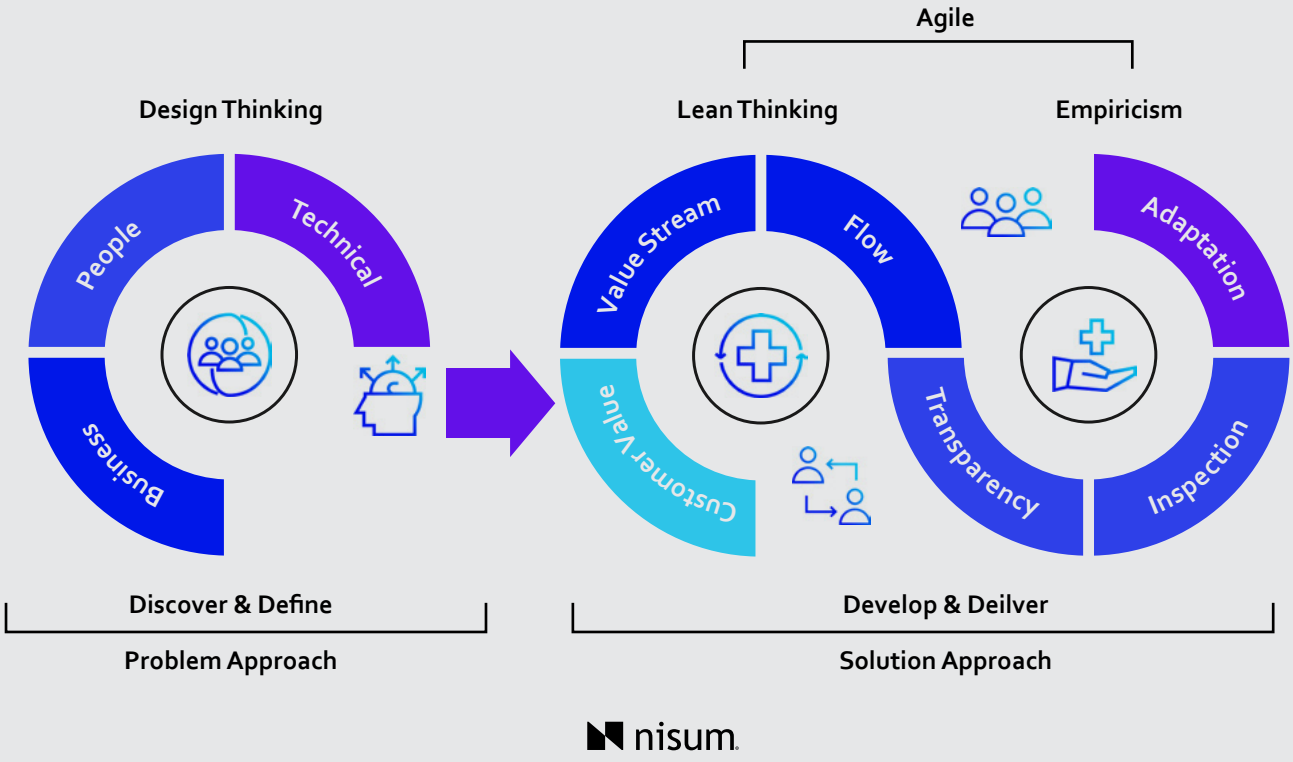
If any aspects of a process deviate outside acceptable limits or if the resulting product is unacceptable, the process that is applied or the materials being produced must be adjusted. The adjustment must be made as soon as possible to minimize any further deviation. Adaptation becomes more difficult when the people involved are not empowered or self-managing, as the team is expected to adapt anytime they learn something new through inspection.

Goals of Empiricism

The empirical approach provides insight through experience, allowing businesses to develop products incrementally through continuous process improvement. Scrum is a framework that takes an empirical and iterative approach to managing product development that produces fact-based, experience-based, and evidence-based iterative results that keep the development process aligned with changing business needs.

Nisum Business Delivery Model for Healthcare Products

Design thinking, lean thinking, and empiricism is often seen as three separate approaches. The Scrum framework, founded on lean thinking and empiricism, helps to create a streamlined product development process when combined with design thinking methodologies. By nature, these processes are designed to be more Agile, user-centric, and highly efficient. To ensure designers, developers, product managers, and key stakeholders collaborate on a common vision, it is important to combine these principles into a cohesive transformation strategy.



The Nisum Business Delivery Model for Healthcare is a combination of three approaches – design thinking, lean thinking, and empiricism. These key elements form a cohesive and continuous delivery model with high ROI. Design thinking is how we understand, explore, and define the problem. Lean thinking helps us to create a value stream, establish a flow of activities, and achieve optimal business outcomes. Empiricism helps us to create transparency, inspect, and adapt products or services to meet changing market demand. When applied to the healthcare industry, this proven business model helps streamline all aspects of product development by eliminating unnecessary processes, documentation, materials, and activities.

How Nisum Can Help

Our services provide a methodical approach to continuously improving your business confidently and sustainably. Nisum is an experienced partner who orchestrates measurable, holistic Agile transformation anchored in cultural change and enabled by technical excellence.

Nisum's Business Agility team has proven success with optimizing distributed teams and has developed a proprietary concept at the highest maturity level called Agile Next Door© featured in the popular white paper, "Agile Models for Global Teams." The Business Agility team can seamlessly integrate with clients from a cultural and change-mindset perspective. Using our unique Scrum-Team-as-a-Service Model, proven methodologies, and digital measurement tools, we elevate businesses at any level of transformation maturity. We provide our own framework, the Nisum Enterprise Agile Framework (NEAF), to help organizations more effectively institute an Agile culture. Partnering with Nisum is a sustainable way to transform your organization's mindset and culture to quickly meet changes in market demand.

To identify areas of improvement for your business and to receive feedback on your business maturity, take our free Agile Maturity Assessment.

Contact us today to begin your digital healthcare transformation.

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