Design Thinking

Module-4

Contents to be covered

Design thinking in IT industries

Design thinking to Business Process Model

Design thinking for Agile Software Development

Virtual Collaboration

Design thinking in IT industry

Understanding IT industry with an example

XYZ InfoTech

promises to use technology to solve all of your problems!

IT companies - They build software to make other businesses run smoothly!

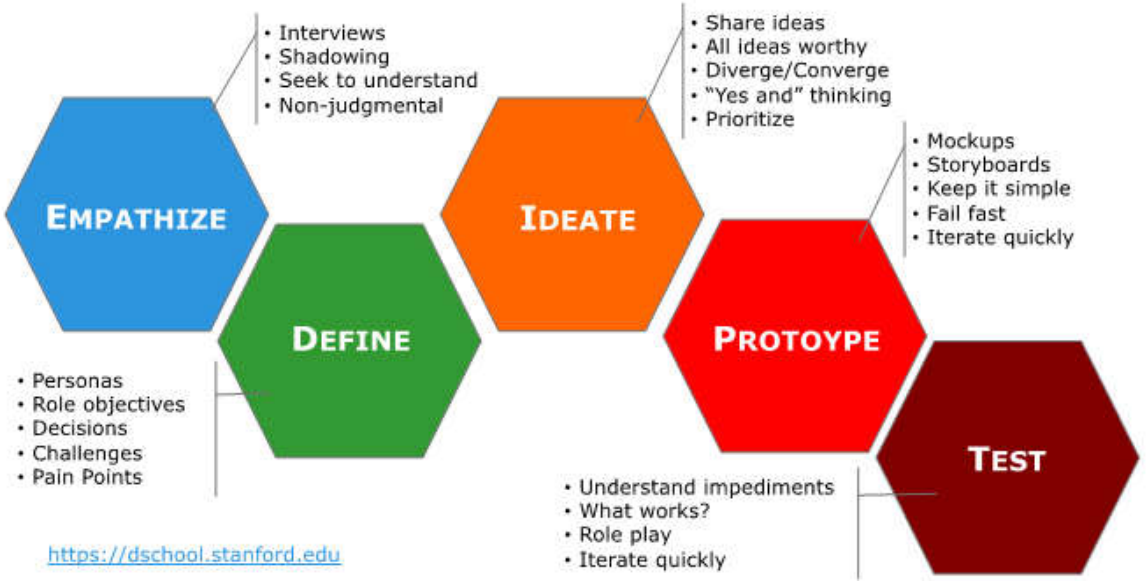
Now if I know some technology and ask a programmer to solve problems by building specific pieces of software

My grocery company has got IT department

IT companies build or maintain software so that businesses run more smoothly. Anyone who builds or maintains software belongs to the IT sector.

Design thinking in IT industry

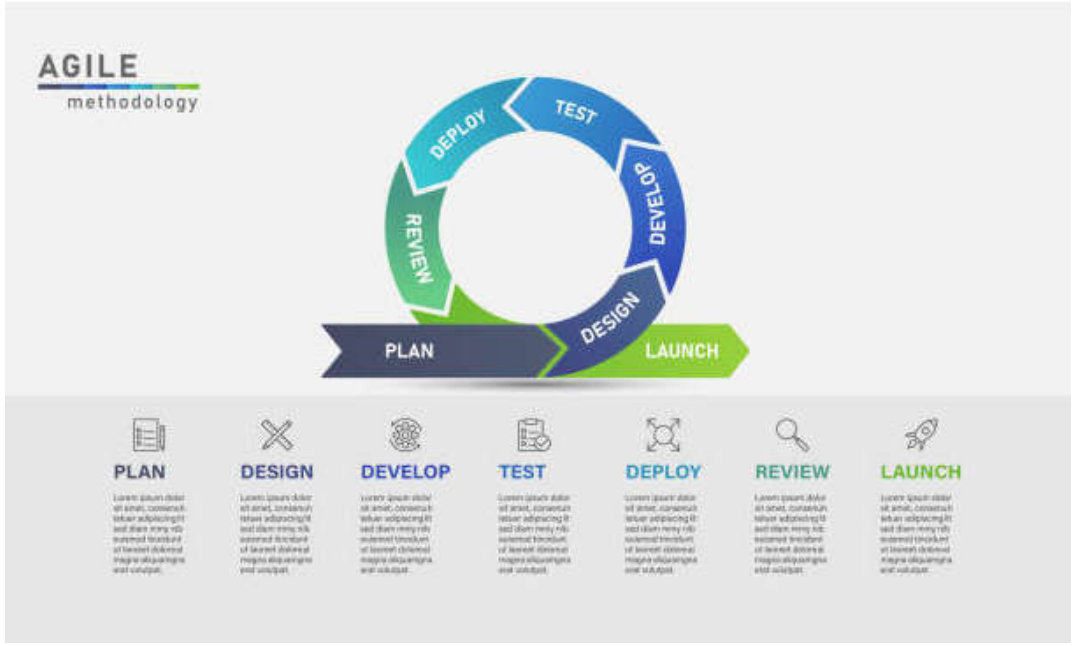
Design Thinking in General



Design thinking in IT industry

IT Industry

Project management



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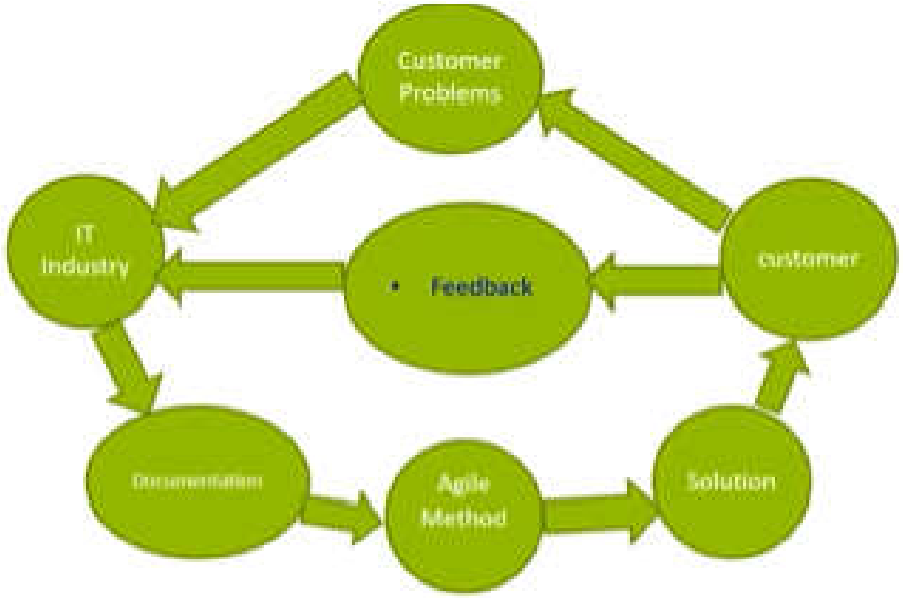

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Agile model of Project Management

Fig. Agile Model

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Design thinking and Agile methodology

30-35% or even 50% of the IT projects fail according to research

Agile improves success rate by almost double by promoting better collaboration and communication

But Agile only provides way to solve problems and how can 1 decide which is the right problem to solve

This is where Design thinking plays a vital role

Combining both is not an easy task and requires culture shift (new way of thinking and doing) and one has to get accustomed to this cultural shift

This combination value people over processes

Organizations have to allocate right people for the projects and they should ensure cultural compatibility between teams and the way Design thinking and Agile methodology work

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Best practices for combining Design thinking and Agile methodology

Invest in user research

A clearly defined problem statement

Build a productive team culture

Optimal use of Design thinking

Design patterns and periodic testing

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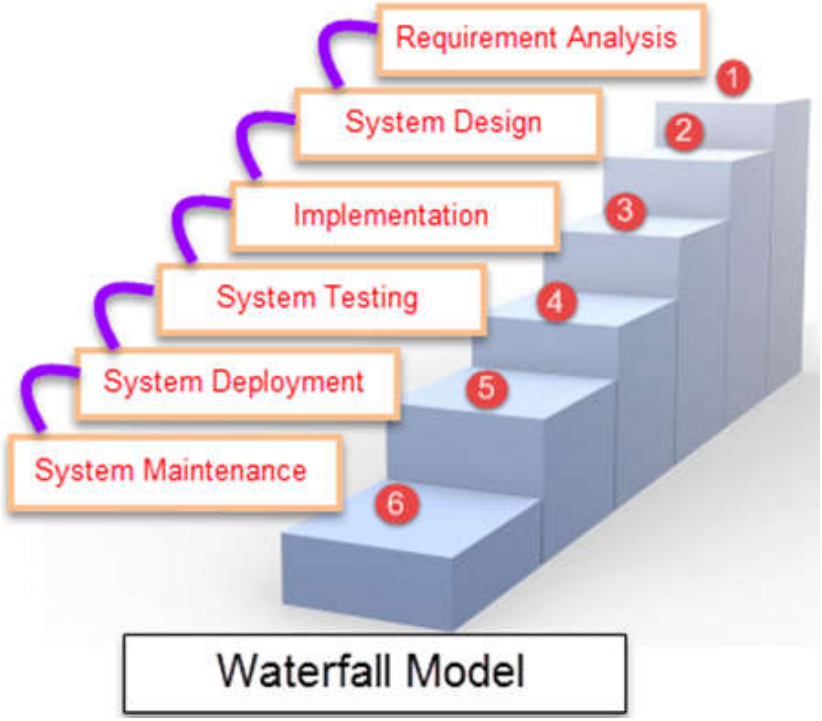
Waterfall Model



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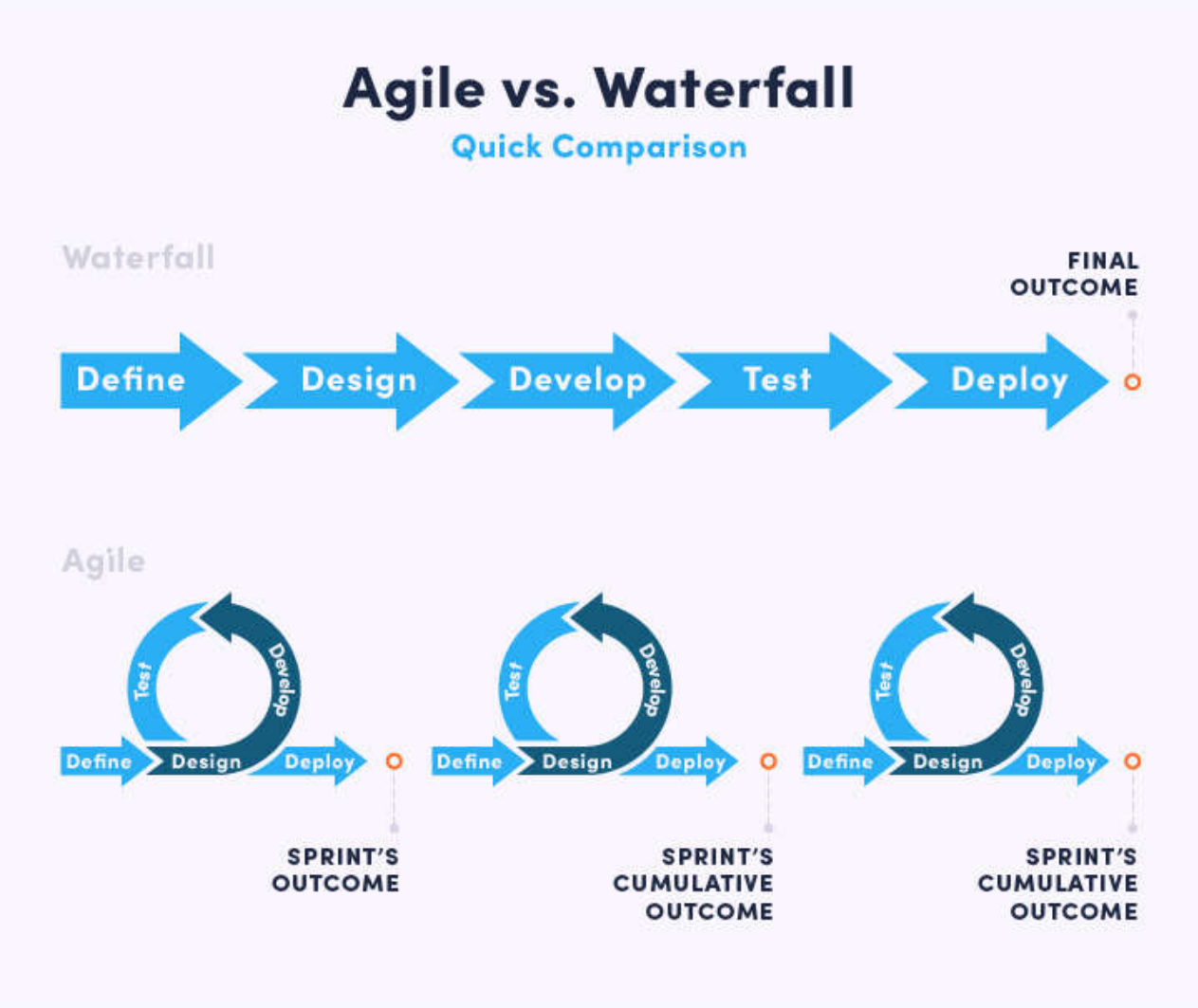

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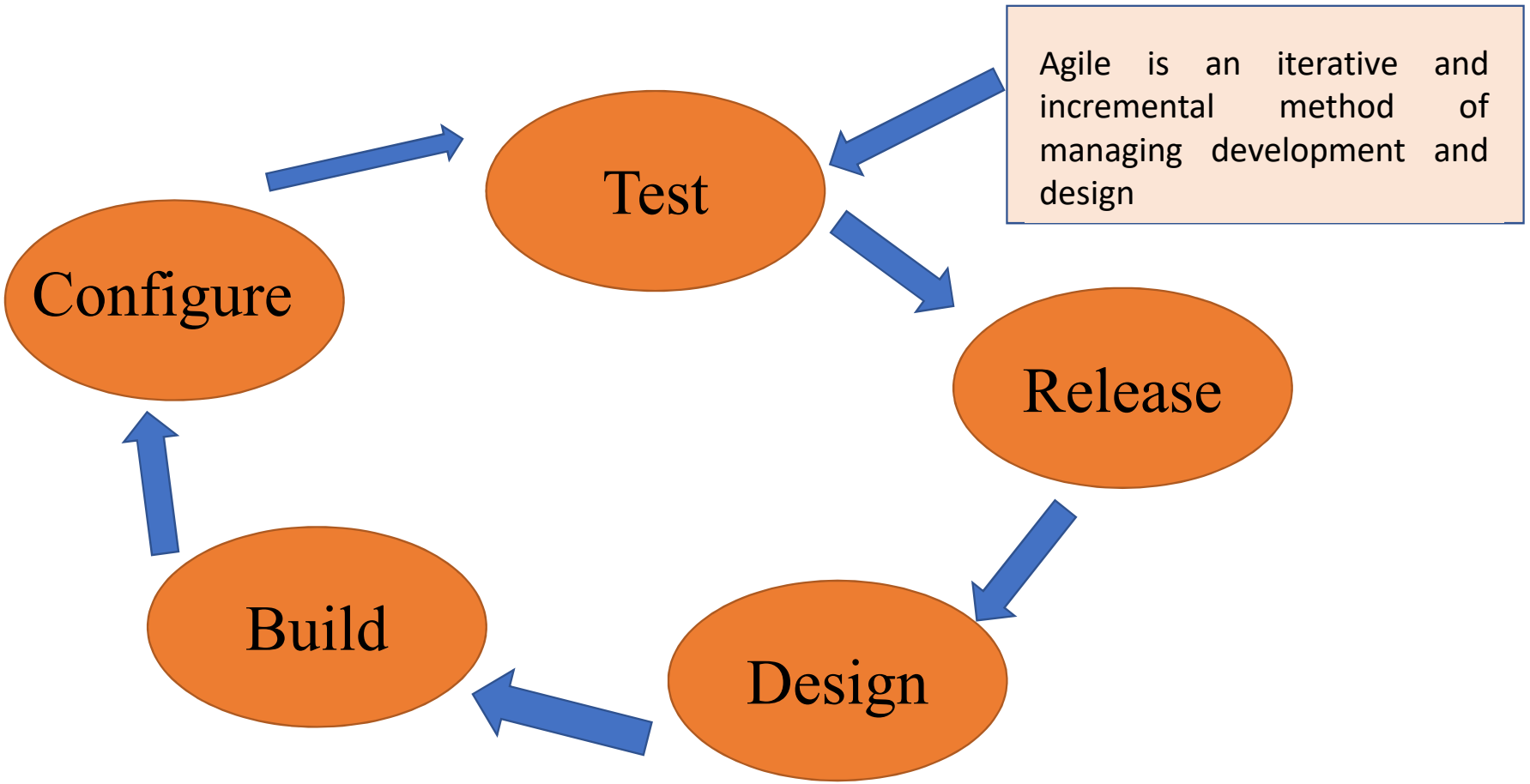

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Advantages of Agile Development Method used in software development in IT Industry

Solutions are Prototyped and Results are verified

Best solutions are accepted

Before approval itself the solutions are experienced by the client

To improve user experience short iterations are possible

Small cross-functional teams

Incremental delivery is possible

Fast feedback helps the designers and developers

Continuous improvement is possible

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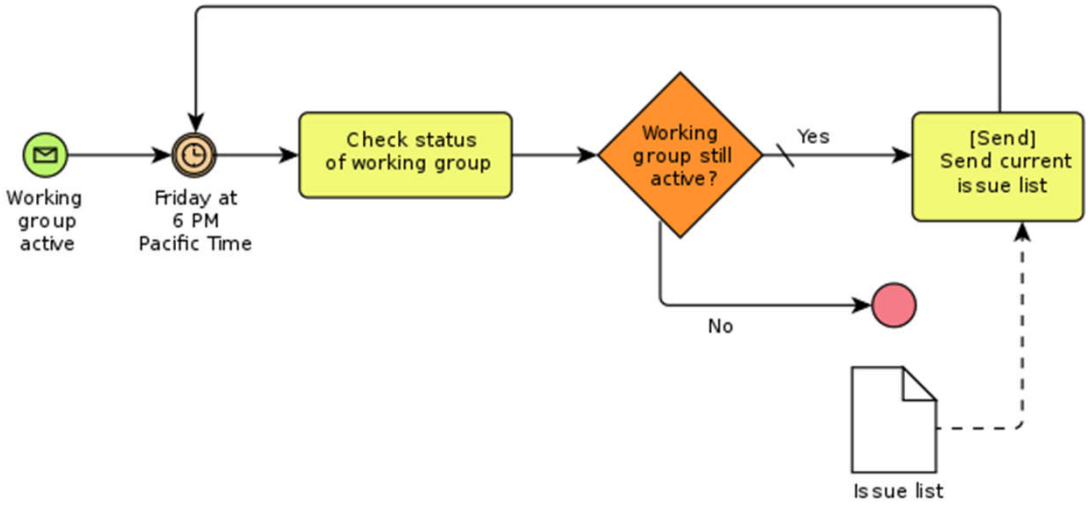
Design thinking in Business Process Modelling

What is Business Process Model?

Business process management (BPM) is a way of breaking down business processes into their most basic elements: the tasks and activities a business carries out. BPM shows, clearly and transparently, how a product or service transforms as it moves through an organization's process sequence, often in near real-time.



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Design thinking in Business Process Modelling

Process models mediate communication between stakeholders: Business analysts, process participants and software architects

Process models provides shared understanding so that everyone can contribute knowledge

BPM – Combination of various process related steps: Process mapping, Process discovery, Process simulation, Process analysis and Process improvement.

BPM – Arrived from last few decades and have replaced previous organizational efficiency packages: Time and Motion Study (TMS) and Total Quality Management (TQM).

Process models mediate communication between stakeholders: Business analysts, process participants and software architects

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Design thinking in Business Process Modelling

Advantages of BPM

Align operations with business strategy

Improves process communication

Increase control and consistency

Improve operational efficiencies

Gain competitive advantage

Design thinking in IT industry

Design thinking in Business Process Modelling

By revealing the way things are done at an organization, and comparing that with the way things should be done, BPM highlights the dependencies and relationships between people, process, and technology—and where those elements are ripe for improvement.

Design thinking is also focused on improvement, but takes the end-user or customer experience as a starting point. Fundamentally, design thinking uses empathy to understand the way people feel about using a service or product, including where their frustrations lie, then builds on that knowledge to create improvements, with the ultimate goal of making customers' lives and experiences better and more fulfilling.

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Design thinking in Business Process Modelling

There are five key phases of design thinking:
•There is a challenge: How do I solve it?
•I have learned something: How do I act upon it?
•There is an opportunity: What do I create?
•There is an idea: How do I build upon it?
•I tried something: How do I evolve it?

This is an ongoing, cyclical approach, with the practice of 'design, test, and iterate' at its center— that is, constantly creating and rapidly deploying prototypes or new ideas, then testing and reflecting on them, including through fast feedback from customers. Organizations therefore spend less time and resources any one idea, and yet have the capacity to quickly scale up any idea that has merit, and positive reactions from customers.

The similarities to BPM are clear. Process improvement requires the same approach of identifying a challenge (like an inefficient process), generating the information needed to understand why the process is inefficient, implementing a possible solution, then measuring the effectiveness of that solution over time. Rinse and repeat! Merging the two disciplines essentially means using the insights gained through an effective BPM framework to feed into the design thinking process, and enhance customer-facing business processes.

After all, without a clear view of the current state operational structure and business process landscape to analyze, the risk of producing a 'solution' which is in fact not fit for purpose, or causes issues in other parts of the system, is amplified.

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Design thinking in Business Process Modelling

Benefits of Design Thinking and BPM

Working in tandem, design thinking and BPM unlock a range of powerful (and potentially lucrative) benefits, including:

•Competitive advantage, gained through a willingness to innovate, then ‘double-down’ on ideas that work, and discard ones that don’t—before they become a liability
•Moving beyond traditional process maps and case models to more customer-centric and human-scale products and services
•Pooling collective ease and enhancing collaboration, through building multidisciplinary teams to focus on a single problem
•Harnessing natural empathy, leading to a better understanding of the needs and challenges of customers
•Generating more revenue by ensuring a deeper level of customer satisfaction

Design thinking in IT industry

Agile in Virtual Collaboration

In the book ‘The Flat World’ The author Thomas Friedman indicates the word ‘FLAT’ with an imaginary impression that, technology and internet has changed the world so abundantly that in modern times people work remotely not only from a single geographic location but also across continents with different time zones, cultures and even languages.

Thomas Friedman explains flattening as (The world is flat, 2005) the combination of a personal computer with fiber optic micro cable, using the internet with the help of a working software.

Working remote and in a global environment is not so uncommon anymore and has gained acceptance as a general working norm in last couple of decades.

With insourcing, outsourcing and companies operating in a global environment do business globally. With the management headquartered at a single location however do operate with other regions with the use of technology. This means business run globally and hence projects within the organizations also path globally.

Agile methods are more popular in the software industry however have gain so much admiration that other industries also want to pursue its benefits in their businesses. Operating in a global environment make these frameworks more challenging to operate efficiently.

Design thinking in IT industry

Agile in Virtual Collaboration

Agile methodology can accept changes anytime compared to that of a waterfall method, and hence collaboration between collocated teams eases out the agile processes. Besides coordination; interaction, development, planning, review, retrospective sessions etc. also immensely reduce time and effort.

Working remote or distributed is considered being competitive and is considered a fit operating model. Some companies also provide it as a choice to its employees. Businesses want to leverage talent round the clock, use the best talent which may not be locally available, cheap labor by outsourcing to low cost countries, higher productivity and numerous strategic reasons.

With growing needs of working remote, it is intolerable to voice that agile methods will not work by distributed teams. Although few trials will arise, with the help of tools and techniques moving to a remote working environment is possible.

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Agile in Virtual Collaboration

ALLOW TRANSPARENCY

As company or a lead establish a transparent environment. Provide a sense of trust in the team members with the decisions they make an organize sessions with them to align these decisions with company goals and vision. Do not keep responsibilities a secret. Be clear over job functions. Make sure the outcomes are public across the team. Gather feedback. Establish open communication channels.

ESTABLISH A CULTURE OF CONTINUOUS IMPROVEMENT

Drive improvements within the team. Recognize potential improvement opportunities and obtain ideas from the team. Listen to suggestions and rationally take appropriate steps. Agile principle drives continuous improvement and thus team members are open for improvement opportunities. Generate calculated experiments to implement improvement initiatives.

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Agile in Virtual Collaboration

COMMUNICATION

Communication is perhaps the most important artefact in any team. how you structure your communication will determine the output. Practice deep communication at all levels. A strong emphasis on communication is the key. Communication need not happen only via emails, phone calls or meetings, however in enterprises major communication happen with the help or ERP tools which help you be agile all the time.

CONSTRUCTION OF A RHYTHM

There are three things which are absolute necessary in agile methodology: Transparency, inspection, and adaptation. Scrum also calls it the three pillars of Scrum (Scrum Guide, 2005). It is important we create a tempo which operates around these pillars of Scrum. Having said that this drives in creating a self-collaborating team which is a prime eminence of Agile.

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Agile in Virtual Collaboration

GENERATE A CULTURE OF COURAGE & FLEXIBILITY

This also goes with the concept of fail fast. Failure is not bad; it is okay to fail. However, here the key argument is to fail fast. Establish an environment where the team is courageous to take steps to try out something new. The idea is to reduce the delay. Detect the failure fast and further twist your initiatives.

ESTABLISH A SUSTAINABLE ENVIRONMENT AND WORK LIFE BALANCE

Often distributed team end up stretching their normal working hours which lead t over working than regular hours or working at odd time. Establish rules and ensure no team member is defaulting these principles making the fellow counterpart abuse this principle. Plan appropriate and set expectations accordingly.

VISUALIZE EVERYTHING

A very important footstep. Planning of tasks is easier leverage tools that provide you a visual interpretation of tasks to be completed. Establish a solution that allows the team members to view workflows, depict who is working on what, align together be able to pick the right task of right priority and at a right time. This solution will help you capture the right problem areas and effectively retrospect them to improve your processes.

Design thinking in IT industry

Agile in Virtual Collaboration

The best example being the COVID-19 Pandemic which taught employers to be agile and Employers offered flexible time options to employees. We can take the examples of our own institutions.

The Role of the Prototype

Prototypes throughout the design process and used these as a way of understanding their own designs and getting feedback from others.

Includes models, sketches, scenarios, CAD drawings, garment patterns, etc.

Training, culture, and Client (internal and external) expectations influence exists

External clients in Asia and Europe, for example, were more responsive to prototypes that were polished and resembled the “real thing” whereas North American clients tolerated prototypes that were strung together with duct tape and bailing wire

The Ecology of Design Education

Multiple constituents including students, faculty, administrators, potential employers, government bodies, and professional associations.

These constituents interact with educational institutions, the amount of influence they have, and how these interactions shape design education and the future work done by students educated at these institutions

MVP vs Prototype

A prototype is a way to rapidly test the basic ideas and assumptions behind the product.

In contrast, an MVP is a usable version of the product with just the core feature or features, ideal for testing, resulting in feedback and useful data, yet with a minimum of time and money invested at this stage.

Eric Ries, inventor of lean startup, has defined MVPs as, “…a version of a new product which allows a team to collect the maximum amount of validated learning about customers with the least effort.”

A product which has just enough features to gather validated learning about the product and its necessary further development

Quantifiable data, such as revenue, user engagement, and evidence-based feedback leading to genuine improvements in future product iterations.

Differences between a prototype and an MVP:

- A prototype tests the idea. An MVP tests the product.
- A prototype tests the basic concept; an MVP tests features, treating the basic concept as already proven.
- An MVP is functional, it can be used (in however limited a way). A prototype is often more like the visual appearance of the product.
- A prototype can be a foundation for the MVP design (in some cases, it makes sense to validate the basic hypotheses using the prototype, and then develop an MVP to progress the work further).

Prototype vs. MVP