SNS COLLEGE OF ENGINEERING

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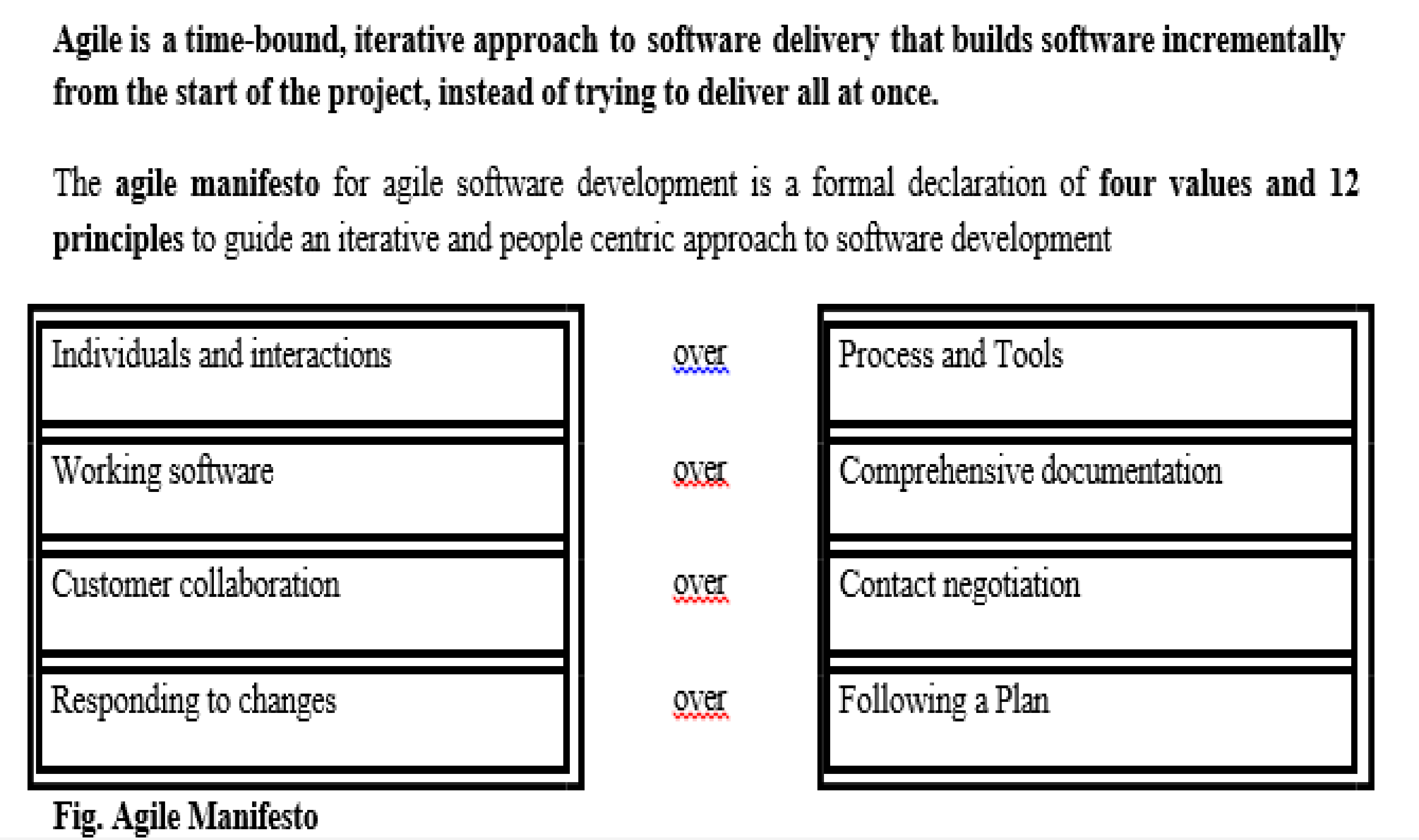
Department of Artificial Intelligence and Data Science

Introduction to Agility and Agile Process

Introduction to Agility



Agile is a time-bound, iterative approach to software delivery that builds software incrementally from the start of the project, instead of trying to deliver all at once.

The **agile manifesto** for agile software development is a formal declaration of **four values and 12 principles** to guide an iterative and people centric approach to software development

Individuals and interactions	over	Process and Tools
Working software	over	Comprehensive documentation
Customer collaboration	over	Contact negotiation
Responding to changes	over	Following a Plan

Fig. Agile Manifesto

Introduction to Agility

Why Agile?

- Technology in this current era is progressing faster than ever, enforcing the global software companies to work in a fast-paced changing environment.
- Because these businesses are operating in an ever-changing environment, it is impossible to gather a complete and exhaustive set of software requirements.
- Without these requirements, it becomes practically hard for any conventional software model to work.
- Agile was specially designed to meets the needs of the rapidly changing environment by embracing the idea of incremental development and develop the actual final product.

Agile Process

- In 1980's the **heavy weight, plan based** software development approach was used to develop any software product.
- In this approach too many things are done which were not directly related to software product being produced.
- If requirements get changed, then rework was essential. Hence new methods were proposed in 1990's which are known as agile process.
- The agile process is light-weight methods which are **people-based** rather than plan-based methods.
- The agile process forces the development team to **focus on software** itself rather than design and documentation.
- The agile process believes in **iterative method**.
- The aim of agile process is to **deliver** the working model of software **quickly** to the customer.

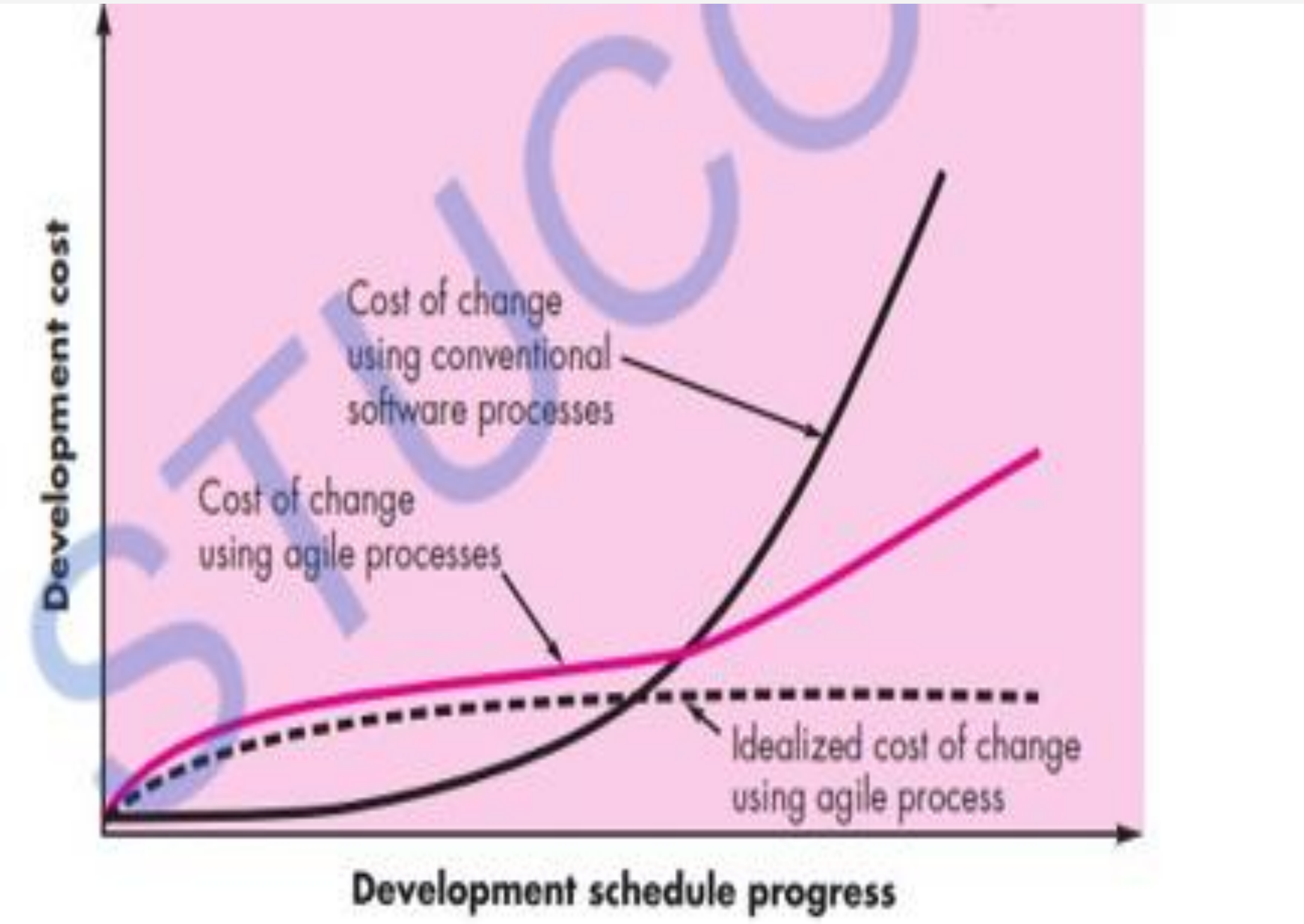
Agile Process

Conventional software Development Methodology:

- The conventional wisdom in software development is that the cost of change increases nonlinearly as a project progresses.
- It is relatively easy to accommodate a change when a software team is gathering requirements. A usage scenario might have to be modified, a list of functions may be extended, or a written specification can be edited.
- As the progresses and if the customer suggest the changes during the testing phase of the SDLC then to accommodate these changes the architectural design needs to be modified and ultimately these changes will affect other phases of SDLC. These changes are actually costly to execute.

Agile Methodology

- When incremental delivery is coupled with other agile practices such as continuous unit testing and pair programming then the cost of changes can be controlled.
- The following graph represents the how the software development approach has a strong influence on the development cost due to changes suggested.



Agile Principles

There are famous 12 principles used as agile principles:

1. Highest priority is to satisfy the customer through early and continuous delivery of valuable software.
2. It welcomes changing requirements, even late in development.
3. Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shortest timescale.
4. Business people and developers must work together throughout the project.
5. Build projects around motivated individuals. Give them the environment and the support they need, and trust them to get the job done.
6. The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.
7. Working software is the primary measure of progress.
8. Agile processes promote constant development. The sponsors, developers, and users should be able to maintain a constant.

Agile Principles

9. Continuous attention to technical excellence and good design enhances agility.

10. Simplicity the art of maximizing the amount of work not done is essential.

11. The team must be self– organizing teams for getting best architectures, requirements, and designs emerge from.

12. At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly

thank you