### **Distributed Software Systems**

.A distributed system is multiple computers communicating via a network

/trying to achieve the same task together / consist of “nodes”(car, robot, phone, computers,..)

**Why make a system distributed?**

* **It’s inherently distributed:**

e.g Sending a message from your mobile phone to your friend’s phone

* **For better reliability:**

Even if one node fails, the system as a whole keeps functioning

* **For better performance**

Get data from a nearby node rather than one halfway round the world

* **To solve big problems**

E.g: a huge amount of data, can't fit on one machine

Agile methodology.

**What is Agile**

Agile is an iterative approach to project management and software development that helps teams deliver value to their customers faster and with fewer headaches. Instead of betting everything on a "big bang" launch, an agile team delivers work in small, but consumable, increments. Requirements, plans, and results are evaluated continuously so teams have a natural mechanism for responding to change quickly. [www.atlassian.com/agile](http://www.atlassian.com/agile).

### **Why Agile Application lifecycle management is important?**

Most businesses that have adopted agile methodologies have also adopted DevOps practices. A common practice in agile DevOps is the implementation of ALM. It is the most widely applied lifecycle in the software industry and has been adopted by many businesses to manage their software development projects. It is essential to understand that agile and waterfall approaches have different lifecycles. When working on an agile project, you’re not following a lifecycle designed for waterfall projects. If you’re mixing waterfall with agile, you’re only going to create a mess. This is why businesses need to select the right lifecycles for their projects.

In software development, agile practices include requirements discovery and solutions improvement through the collaborative effort of self-organizing and cross-functional teams with their customer(s)/end user(s), adaptive planning, evolutionary development, early delivery, continual improvement, and flexible responses to changes in requirements, capacity, and understanding of the problems to be solved. [Wikipedia Agile software](https://en.wikipedia.org/wiki/Agile_software_development) development

Agile was popularized in 2001, with the [Manifesto for Agile Software Developement](https://agilemanifesto.org/), in which they wrote [twelve principles](https://agilemanifesto.org/principles.html) of Agile Software, all deriving from these main values:

* Individuals and interactions over processes and tools
* Working software over comprehensive documentation
* Customer collaboration over contract negotiation
* Responding to change by following a plan

Agile is one of the most popular approaches to project management. However, there are different frameworks, each has a different focus. Well-known agile frameworks include Scrum, Kanban, Lean, DSDM, XP, FDD and Crystal.

Scrum implementation in individual project

Scrum is a business practice conceived, designed, applied, and marketed to make corporate operations run more smoothly. According to [Scrum.org](https://www.scrum.org/resources/what-is-scrum), Scrum is “a framework within which people can address complex adaptive problems, while productively and creatively delivering products of the highest possible value.”

More than 12 million businesses use Scrum regularly. And although Scrum helps teams bring a product to market, it’s easy to adapt for individuals and families to [plan and achieve their own goals.](https://www.moneycrashers.com/setting-long-term-personal-financial-goals-examples/)

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