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AGILE
METHODOLOGY

Evaluation and Monitoring

Evaluation of processes and current structure of the company

AGILE
METHODOLOGY

Suggestions for improvement and process optimization

Application, construction and implementation

Application design together with the client

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INTRO

There is multiple type of software development methodology in the market. Agile is one of the best methodology and it's been widely used by multiple companies across the globe. It provides opportunities to assess the direction of a project throughout the development lifecycle. Previously waterfall model were used by companies for the development of software. Soon people came to understand the shortfalls of water fall model. Agile methodology first came into picture in 1957 when Bernie Dimsdale, John von Neumann, Herb Jacobs, and Gerald Weinberg worked closely together on developing software for IBM and Motorola. On year 1970 the agile methodology was used formally by Dr. Ernest Edmonds, Tom Gilb, and the New York Telephone Company's Systems Development Center. By 1990 it has gain it popularity and by 2011 almost every single software company has adopted agile.

Agile methodology describes a set of steps for software development under which requirements and solutions evolve through the collaborative effort of self-organizing various cross-functional teams. The methodology includes planning, evolutionary development, early delivery and continuous improvement and it encourages rapid and flexible response.

The manifesto of this methodology includes followings:

- Customer satisfaction
- Welcome changing requirements
- Working prototype is delivered frequently
- Close, daily meetings/cooperation's between business people and developers
- Face-to-face communication or communication using various communication software's
- Working prototype is the principal measure of progress
- Sustainable development helps to maintain a constant pace
- Continuous attention given to technical excellence and good intuitive design
- Simplicity is essential
- Best architectures, requirements, and designs emerge from closed corporative team

AGILE METHODOLOGY STEPS:

> **Initiation & Planning Stage**

The planning stage establishes a bird's eye view of the intended software product, and uses this to establish the basic project structure, evaluate feasibility and risks associated with the project, and describe appropriate management and technical approaches. The Project Plan is prepared and it becomes the master document to plan the entire project lifecycle.

> **Requirement Definition Stage**

These requirements define the major functions of the intended application, define operational data areas and reference data areas, and define the initial data entities. Major functions include critical processes to be managed, as well as mission critical inputs, outputs and reports. A Requirements Traceability Matrix is also prepared to act as a marker and checklist to manage the Requirements and Tracing them in the project output scenario. In this format, each requirement can be traced to a specific product goal, hence the term requirements traceability.

> **Design Stage**

This being a very important stage in the project lifecycle and generallyinclude functional hierarchy diagrams, System Design Documents, screen layout diagrams, tables of business rules, business process diagrams, and a complete entity-relationship diagram is prepared.
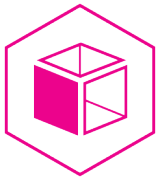
> **Development Stage**

The development stage takes as its primary input the design elements described in the approved design document. For each design element, a set of one or more software artifacts are produced. Software artifacts include but are not limited to menus, dialogs, data management forms, data reporting formats, and specialized procedures and functions.

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> **Integration & Test Stage**

During the integration and test stage (including the UAT), the software artifacts, online help, and test data are migrated from the development environment to a separate test environment.

> **Delivery & Acceptance Stage**

During the installation and acceptance stage, the software artifacts, online help, and initial production data are loaded onto the client production server. All delivery details are mentioned in the 'Release Note' document. After satisfactory acceptance of the final delivery, formal Sign-Off for Acceptance is obtained from customer. The project enters into the Support part after the 'Go-Live' stage.

MANAGEMENT OF PROCESSES – SCRUM MODEL

Scrum –Scrum is an agile process that can be used to manage and control complex software and product development using **Iterative** and **incremental** practices.

Scrum helps…

- To deliver high business value of the software first, by prioritizing the features list
- Clients to become realistic about what can be achieved
- Developers work in a self-organized way
- To collaboratively explore and find the right solution
- To keep building the solution at a fast pace
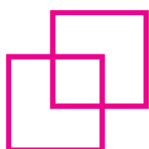
AGILE VS WATERFALL

Agile	Waterfall
Agile method proposes incremental and iterative approach for software design and development	Design and development of the software flows sequentially from start point to end point
Agile process is broken into multiple individual models	Processes are not broken into individual models
Client has early and frequent opportunities to look at the product and make decision and changes to the project	Client can only see the product at the end of the project
Agile methodology is considered unstructured compared to the waterfall model	Waterfall are more secure because its more plan oriented
Small projects can be developed very quickly. For large projects, it is difficult to estimate the development time	All sorts of project can be estimated and completed easily
Error can be fixed in the middle of the project	Only at the end, the whole product is tested. If the requirement error is found or any changes have to be made, the project has to start from the beginning

Agile	Waterfall
Development process is iterative, and the project is executed in short (2-4) weeks iterations.	The development process is divided into phases, and the phase is much bigger than iteration. Every phase ends with the detailed description of the next phase.
Documentation attends less priority than software development	Documentation is a top priority and can even use for training staff and upgrade the software
Every iteration has its own testing phase. It allows implementing regression testing every time new functions or logic are released	Only after the development phase, the testing phase is executed
In agile testing when an iteration ends, some features of the product is delivered to the customer. It is useful when the company has good contact with customers	All the features which are been developed are delivered at once after a implementation process
The team includes designers, developers and testers	Testers work separately
User acceptance is performed after every sprint is complete	User acceptance is performed at the end of the project
It requires close communication with developers and client to analyzethe requirement and complete the planning	Developer does not involve in requirement and planning process.

AGILE METHODOLOGY INDUSTRY MARKET SHARE
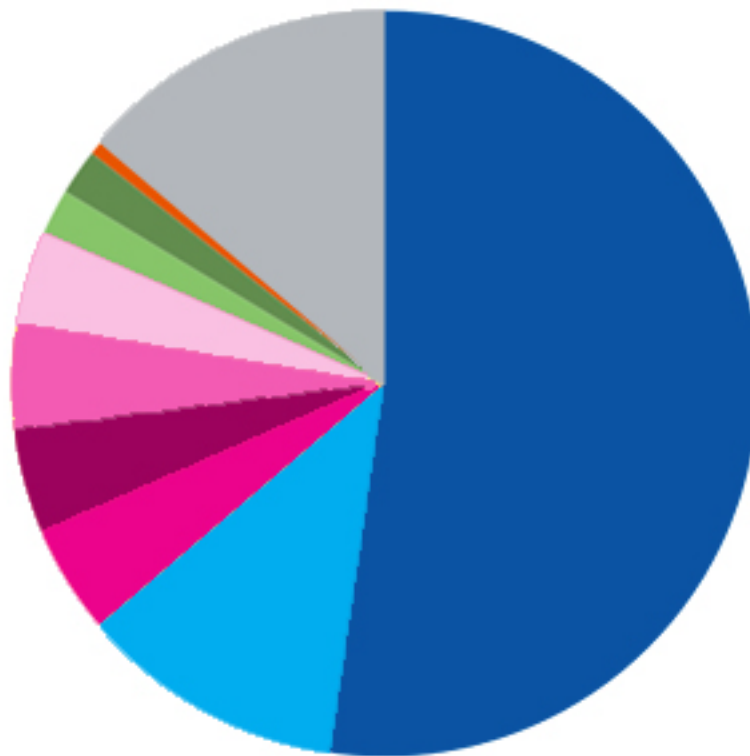
52% Software/IT   **4%** Finance

11% Marketing/advertising   **2%** Education

5% Construction   **5%** Event planning

5% Architecture   **1%** Industrial/manufacturing

5% Product development   **13%** Other

As per to the graph above the software and IT development industry used more Agile methodology than any other industry.

AGILE METHODOLOGY USAGE AS PER DEMOGRAPHICS

North America: **50%**

Europe: **28%**

Asia: **10%**

South America: **5%**

Oceania: **4%**
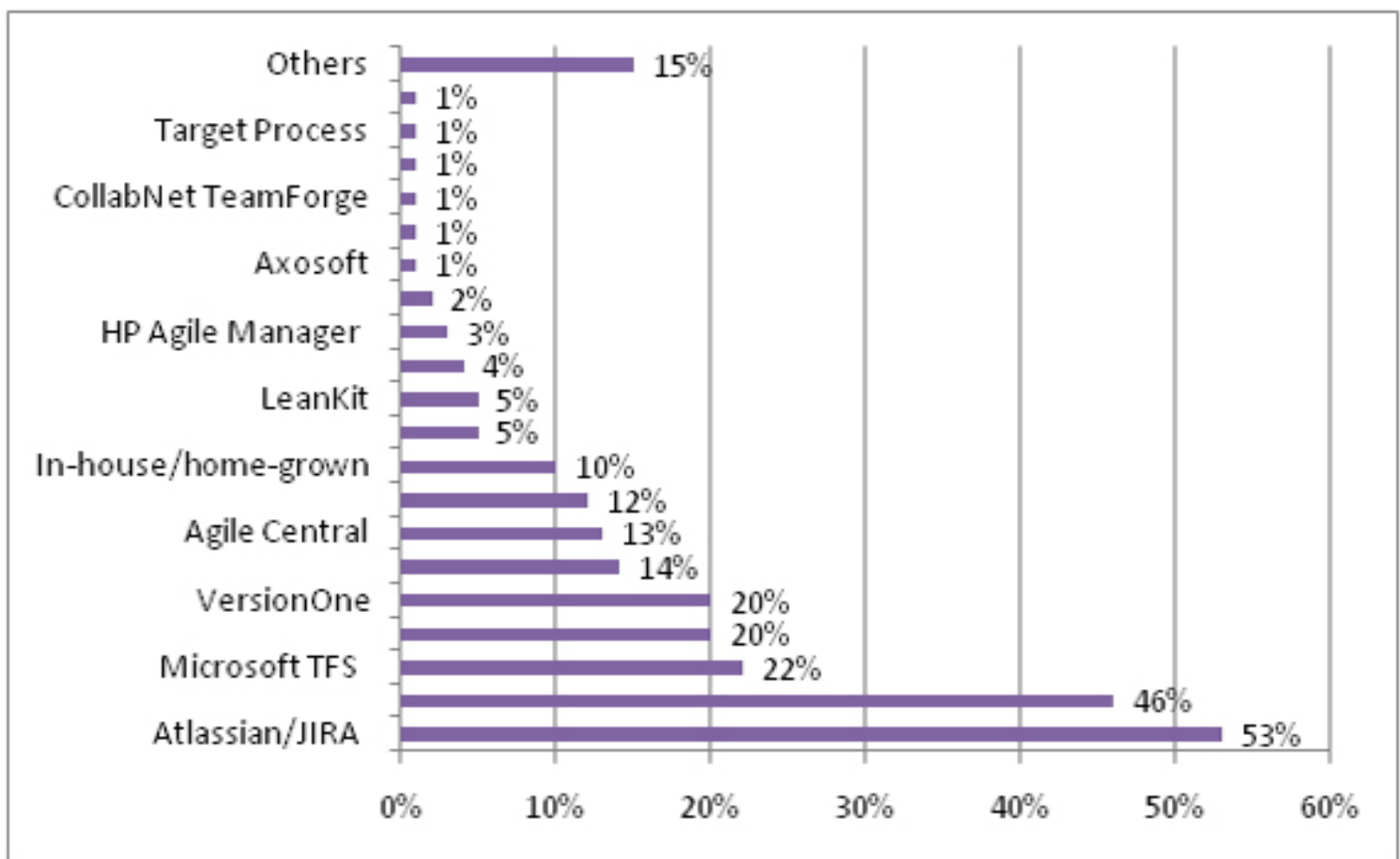
Africa: **4%**

SUCCESS RATE OF AGILE METHODOLOGY

Success of Agile Projects

98%

of company said that their organization has realized success from agile projects.

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USE OF AGILE MANAGEMENT TOOLS

CONCLUSION

So we can say agile methodology is a tried and tested methodology and it's widely used by multiple companies across the globe. Agile methodology is based in iterative software development. Agile methodology invites developers to get involved in testing, rather than a separate quality assurance team.

Agile methodology helps a company to complete a project smoothly and also cost effectively. Agile methodologies are suitable in changing environments because of new practices and principles that enable a team to develop a product in short duration.

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