



Extract Courtesy: “The Elephant Catchers”
- Subroto Bagchi, Chairman Mindtree Ltd.
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<<Insightful narration of Agile methodology by relating it to how trauma care works in hospitals.>>

AGILE METHODOLOGY ↔ TRAUMA CARE IN HOSPITALS

“When Ramesh Gopalakrishnan, one of Mindtree’s senior-most technical leaders, was trying to figure out how to teach Mindtree’s project groups the Agile methodology of tackling software projects, he went to the Sparsh Hospital in Bengaluru which has an Advanced Trauma Centre. For those who do not know, traditionally, the software development lifecycle follows what is called the Waterfall model in which things happen in a somewhat linear manner. Simply put, first you get the user’s requirements and create the design. After that you draw up the architecture and then develop the software. Once the software is developed, a team tests it for form and functionality, its ability to deliver a secure computing environment, its ability to scale when usage is high, and other such facets. At the end of the testing phase, the software is deployed. Unless one step is complete, the subsequent steps do not get activated. This means that the various teams, starting with the one that collects information about the user’s requirements all the way to the one that oversees deployment of the finished software, work with a lot of time in hand to be able to do things step by step. Central to the development and deployment of industrial-grade software is how team members share knowledge, exchange ideas, question each other, and how formal reviews take place. Large-scale applications often take years to develop using the Waterfall model and get completed in a structured manner involving immense amounts of formalism and documentation.

All that is changing now, thanks to the rapid growth of internet-based applications. Think of Google. It is changing its form and functionality almost every day. People at Google are watching users use applications on the Google platform and rapidly reconfiguring the site based on usage patterns. Behind it all is an environment of a **concurrent build-test-deploy process**. No longer are projects being completed sequentially. **Sometimes applications are developed even before the complete user requirements are known. Similarly, the testing teams work in an anticipatory manner to develop a test plan well before any coding is done.** In such situations, the traditional Waterfall model slows things down and this is why the Agile methodology is used.

The Agile methodology, as its name suggests, does away with the sequential approach. **Every step in the lifecycle of a project using this methodology is simultaneous.** Software professionals need to work very differently here from how they would in a traditional Waterfall team. **There is a high degree of parallelism and teams collapse the know-do gap.** This method does not involve prolonged project reviews in conference rooms backed by

meticulously developed slides and bulky documentation. Everyone in the team has access to knowledge at the same time and at high speed because user needs change constantly and the window of opportunity to read the customers' need and satisfy it is very small.

Now think of the medical team in a trauma hospital. The doctors and the supporting staff cannot predict when, how and in what shape the patient will arrive. Sometimes no one but a number of accident or trauma victims may get wheeled in at the same time. As soon as an emergency call is received, before the ambulance has arrived, the diagnosis begins on the basis of reports from the ambulance staff. Upon arrival of the patients, different teams get to work concurrently, and often need to change their plans on the fly depending on changing requirements. Throughout this critical period, team members constantly exchange information so that every person on duty is aware of what the other is doing and is updated on each new development. **There is a high degree of simultaneity in the way the teams function, and constant knowledge gathering and instant decision-making takes place based on information that arrives in real time.** Trauma teams collaborate in a cross-disciplinary manner; their ability to work in harmony can make the difference between life and death for the patient. In other words, they must work in the most 'agile' manner anyone can imagine. For this, every morning, the doctors lock themselves in for what is called a **scrum meeting**.

A scrum meeting is mandatory as the doctors on duty at the Advance Trauma Centre start their day. They congregate in a small meeting room to discuss the cases from the previous day. Every doctor presents his or her case(s) and talks about what went right and what went wrong, the interventions that were made and reasons for making them. The details are projected as radiographic images on the wall and peers give instant feedback, including criticism and questioning, which can sometimes be quite severe.

The scrum sessions are the most vital and rapid way to distribute knowledge in a system that cannot deal with long waits. Once Ramesh and his team had studied how Sparsh Hospital runs these sessions, they explained to our project teams how scrum meetings were impacting the way the hospital dealt with medical emergencies. If scrum sessions were making a difference in a world where lives depended upon the outcome of the meeting, their efficacy in the world of software, far less volatile than a hospital's emergency and trauma ward, would get immediate results. This was not a case of picking up a specific perspective from another discipline and applying it; it was about picking up perspective..."

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