

# EMERGENCE OF SOFTWARE ENGINEERING



## History And Need of Software Engineering :-

### History

**More Focus on Hardware :-** In early days of computing the primary concern was with building or acquiring the **Hardware**. If the Software didn't work, people thought, it would be easy enough to change it until it did work. In that case, **Why make the efforts to plan?**

**Software Cost Consideration :-** The cost of software amounted to such a small fraction of the cost of the hardware that no one considered it very important to manage its development. **People time was assumed to save machine time**. Making the people process efficient received little priority.

**Meeting People's Expectations :-** When computing matured, programs became more complex and larger.

A team effort is required for program to be **Routinely Specified, written, operated, and maintained** so people's expectations would be fulfilled.

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**Exceeded Cost :-** As program became **large** and **Complex** and the time required to write programs and their costs began to exceed to all estimates.

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**Time - Development :-** Programmers started to take weeks, months or years longer than expected to complete. The systems turned over the client frequently did not work correctly because the money or time had run out before the programs could be made to work as originally intended.

US military, several million dollar project was abandoned due to it could never be made to work properly.

**Quality Concern :-** As computers and their programs were used for more vital tasks, like **Monitoring Life**

**Support Equipment**, program quality also became new concern.

**Change - Expensive :-** Making a change within a complex program turned out to be very expensive. It was quite easier to throw a program than to expect from program to do thing different slightly.



**Fast and Rapid change in Hardware and Software :-**

As tubes were replaced by transistors → integrated circuits. The cost of hardware which had to be increased was getting low. The times and costs to develop the software were no longer so small, compared to the hardware, that they could be ignored.

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## Wrong Analysis of Client Requirement :-

Programmers were often thought they had understood the client requirements. Once the program had been written, the client began to express dissatisfaction.

## No Satisfactory System :-

Unfortunately, until several years ago no good method of representation existed to describe satisfactorily systems as complex as those that are being developed today.

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