



ISSN: 0975-766X

CODEN: IJPTFI

Research Article

Available Online through

[www.ijptonline.com](http://www.ijptonline.com)

## BEST SELECTION FOR BEST MODEL FOR BEST RESULT BASED ON EXAMINATION

S.Thulasi Krishna M.E., (Ph .D), Dr. S .Sreekanth, Ph.D

Research Scholar, Rayalaseema University, Dept of CSE, Kurnool (dist) Andhra Pradesh.

Professor, Sitams, Chittoor(dt), Andhra Pradesh.

Email:thulasikrishna1988@gmail.com

Received on: 18.10.2016

Accepted on: 11.11.2016

### Abstract

All companies face different problems for selecting software development model. Now a days we have number of software development models available in (society) Software Engineering but awareness on best model with best requirement fulfillment process model selection is difficult. So we provide awareness on how software development process models affect the quality of product in development and I propose method to select “Best Selection for Best Model for Best Result (BBB)”. Based on we select Best Model for Best Project. The objective of this paper is to study different categories and examine variety of models describing or modeling, and provide main factors of different software development process models with bar charts based on we select best model for best project.

**Keywords:** Software process model, software process, different software development factors, Bar chart .

### 1. Introduction

Without Software Engineering, Development of any software or product without following any procedures and techniques will lead to quality less product. Faces number of problems during implementation of system. With Software Engineering Provide standard procedures steps, roles, models, principles, architectures systems. Based on standard procedures follow the steps developer develops the quality system. Software engineering provide steps of process development of system, given how systematically interact one phase to next phase. Software Engineering mainly thinking: 1.New Invention 2.challenges how to rectify old system drawbacks to new system. and Software Engineering focus: 1. reliability, 2. efficiency, 3. scalability 4. Performances 5. Quality factors 6. time factor 7. risk analysis 8. cost control. Software Engineering is a new technological discipline from fundamentals of computer science, management science, economics, communication skills and the engineering approach to problem solving. Software engineering, being

a labor –extensive activity, requires both technical skills and managerial control. Management science provides the foundation for Software project management.

**Software Process Model:** The basic techniques to model business processes are flow chart, functional flow block diagram, and control flow diagram [2]. There are different software development approaches known as software development process model. A process model for software engineering is crosses based on the nature of the development project. Some of the traditional software models used in software for example waterfall, incremental, spiral etc. Software process model is an abstract representation of a software process and each process model representation a processes from a particular perspective. Regardless of the process model that encompasses the framework activities like that encompasses the framework activities like, communication, planning, modeling, contraction and deployment is available.

**Software Process :**A software process can be defined as the consistent set polices organization structure, technologies, procedures and artifacts that are needed to conceive, develop, deploy and maintain a software product[1][3]. Thus a software process exploits a number of contribution and concepts. Software process is a structured set of activities required to develop a software system which includes, specification design, validation and evaluation. A software development process is used to develop computer software and it refers to standard methodology which has been used on similar project earlier, or which is used consistently within an organization a software process define the systematic approach that is used as software is engineered. The quality of a software product mainly depends on the people, organization and procedures used to create and deliver it. Developers and practitioner focus their activity on three main goals.

1. Development of structured programming languages
- 2)Development Methods
- 3)life cycle

**Problem:** Now days we have number of software development models available in society. but awareness on best model with best requirement fulfillment process model selection is difficult. All companies face different problems for selecting software development model. All companies face different problems for selecting software development model.

**Solution:** Taken different software development factors like Requirement Specification, un-clear requirement to develop Software, Project Cost, project development progress visibility, Complexity of System ,Risk Analysis, Project preview

Factors represent Bar Chart, based on any sis to select best model for best project.

**Examination of Different Factors of Software**

**Development Process Models**

SL NO	FEATURES	WATER FALL	INCREMENTAL	PROTOTYPE	SPIRAL MODEL	RAPID MODEL
1	Requirement Specification	Beginning	Beginning	Frequently Changed	Beginning	Time boxed Release
2	un-clear requirement	poor	poor	poor	high	poor
3	Project Cost	Low	Low	High	High	Low
4	Project,progress visibility	poor	medium	high	high	medium
5	Complexity of System	Simple	Simple	Complex	Complex	Very simple
6	Risk Analysis	Only at beginning	No Risk analysis	No Risk analysis	Yes	Very low
7	Project preview of customer	poor	medium	medium	high	high
8	Overlapping Phases	No Overlapping	No Overlapping	Yes Overlapping	Yes Overlapping	No Overlapping
9	Implementation Time	Long	Less	Less	Depends on project	Quick
10	Flexibility	poor	medium	High flexible	High Flexible	medium
11	Reliability,	poor	medium	poor	high	high
12	adaptability	medium	medium	high	High	high
13	project size	small	medium	medium	large	large

#### 4.5. Examination of Different Factors of Software

##### Development Process Models

SL. NO	FEATURES	UNIFIED PROCESS	V-MODEL	CONCURRENT	AGILE MODEL	BUILD FIX
1	Requirement Specification	Beginning	Beginning	In the Beginning	Rapidly changes,	Begin not require
2	un-clear requirement	poor	poor	poor	high	high
3	Project Cost	Low	low	medium	Low cost	High
4	Project Visibility	medium	high	poor	high	poor
5	Complexity of System	Too complex	Low	High	Complex	High
6	Risk Analysis	Low	Low	Low	Low	High
7	Project preview	medium	high	poor	high	Poor
8	Overlapping Phases	No	No	yes	Yes	Yes
9	Implementation Time	Less	Long	Depends on Project	High	Depend on Project
10	Flexibility	poor	poor	medium	medium	Medium
11	Reliability,	medium	high	medium	medium	Medium
12	Adaptability	high	high	medium	medium	Medium
13	Project Size	small	medium	medium	large	small

##### 6. Bar Char For Models Comparison:

1. Water fall model 2. Incremental process model

3. Prototype model 4. Spiral model

**5. Rapid application development (RAD) model 6. Rational Unified Process Model**

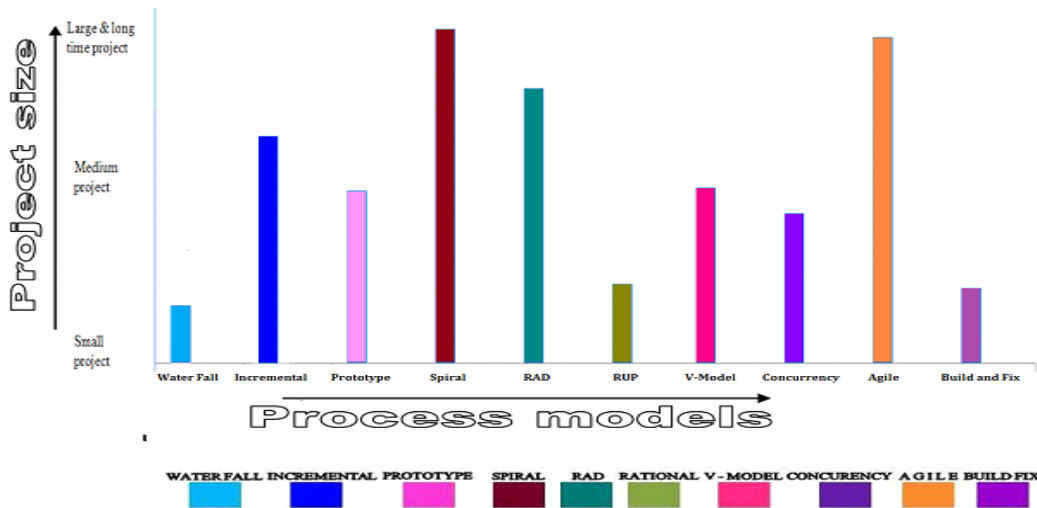
**7. V-shaped model 8. Concurrency Development Model 9. Agile Process Model**

**10. Build and Fix model**

**1. Project Size**

Waterfall model applicable For Small Projects, incremental mode applicable for medium scale project. Prototype model applicable for medium project, spiral model applicable For large Project. Rad model applicable for medium project .rational unified model applicable for Small Projects, v-model applicable for medium project, concurrency model applicable for medium project, agile model applicable for medium project, build and fix model applicable For Small Projects.

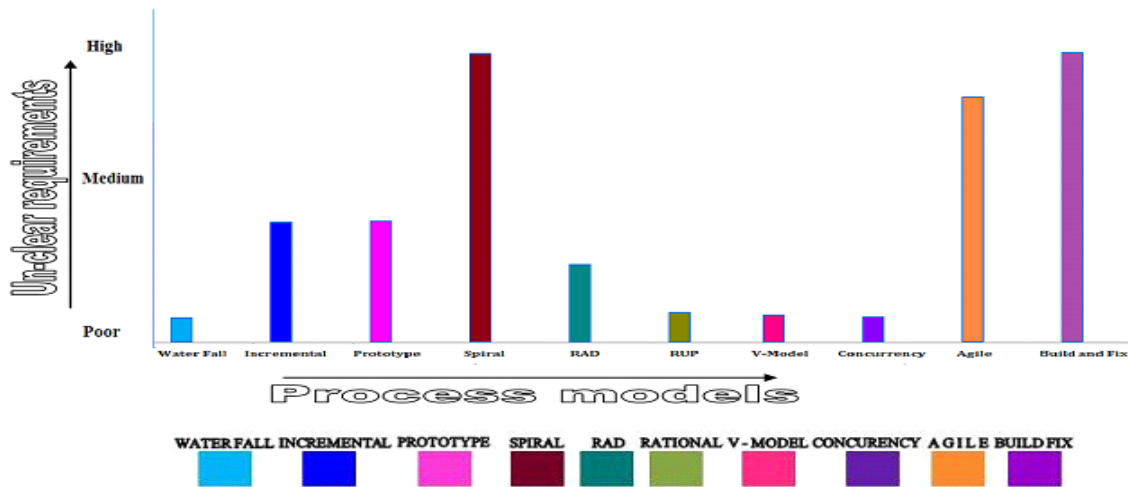
**Project size:**



**2. Un-clear requirements to develop software:**

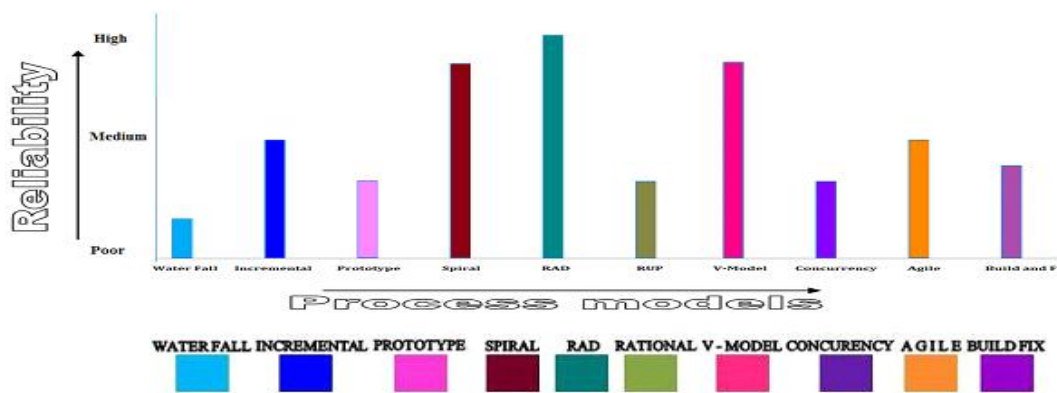
Water fall model can't be implemented without requirements. Incremental model is medium preferable to develop prototypes of projects. Prototype model is medium preferable to develop prototypes of projects. Spiral model Well suited to start project development to certain level of development process.RAD is not suitable for development without requirements.RUP model is not supported to develop software without requirements. V-shaped model is poor to develop software without requirements. Concurrency model is not supported to develop software without requirements. Agile model supports project development without requirements and it allows to change in SRS. Build and Fix model is preferred for large projects to develop.

**Un-clear requirements to develop software:**



**2. Reliability:** Waterfall model not reliable for with changing requirements. Incremental model Contain reliability is achieved with incremental model. Prototype model Reliability is not achieved because of no module based development. Spiral model It achieves high reliability because iterations in reliable requirements. Rad model with modularity reliability is achieved. Reliability is not achieved because of no module based development. Rup model well suited for reliable requirements. v-model concurrent model Reliability is not achieved because of no module based development. Agile model supports reliability to certain level but not maximum level. Build and fix model Reliability is not achieved because of any module based development

**Reliability**



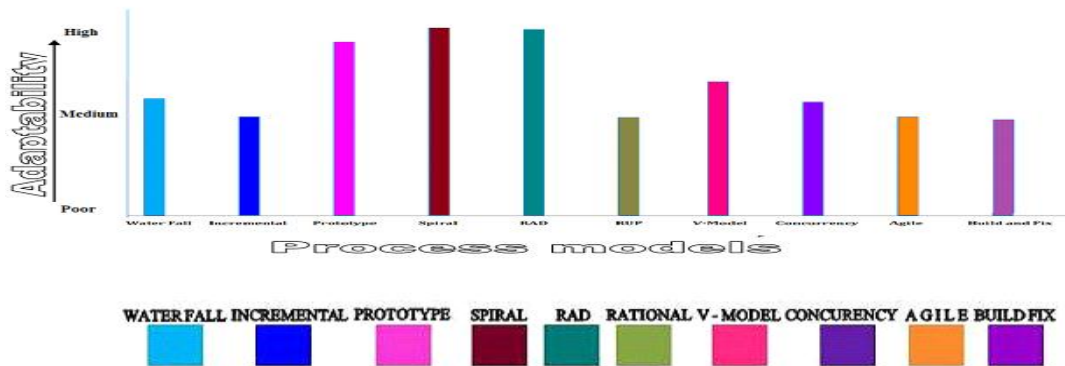
**Adaptability:**

Waterfall model well suited for small projects. Incremental model does not meet adaptability. Prototype model is meant for medium to large projects. Spiral model Every spiral iteration has adoption (API) for next module. RAD adopts for large projects with modularity. RUP model does not meet adaptability. V-model Adopts for variable requirements.

Concurrency is supported with adaptability to medium level. Agile model is supported with adaptability to medium

level. build and fix model is supported with adaptability to medium level.

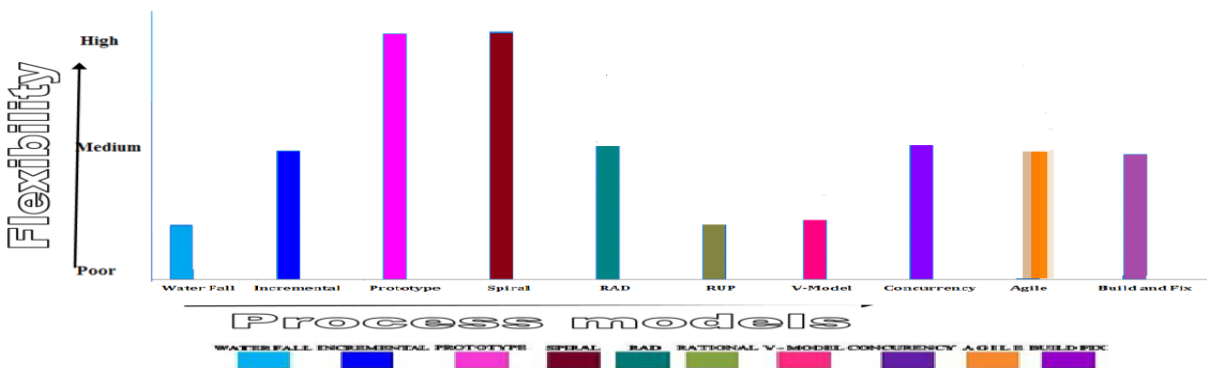
**Adaptability:**



**Flexibility:**

Not flexible with variable requirements incremental model In each increment a few requirements can be added. Prototype model EPM satisfies with variable requirements to incorporate them in development spiral model Highly flexible for long time requirement change and development. Rad model I can't satisfy all are module changes, but to user view level only. Rational model not flexible with variable requirements. V-model not suitable for variable requirements. In each concurrent activity new requirement can be implemented if required. Agile model is allowing requirements to change in development. Build and fix model accepts change in SRS with next build to medium level.

**Flexibility:**

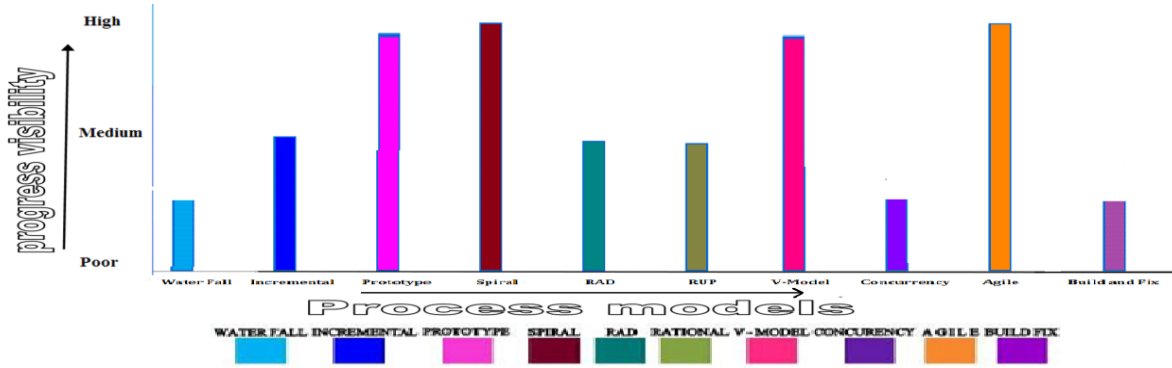


**Project development progress visibility:**

Waterfall model May have false progress to customer .incremental model Customer involved in prototype preview. Prototype model Have progress visibility. Spiral model Each and every module preview have with customer. Rad model Have progress synchronize with customer. Rational model Have progress synchronize with customer. Rational model .

v-model Have medium progress visibility. Concurrency model May have false progress to customer . agile model Each and every module preview have with customer. Build and fix model May have false progress to customer of actual development.

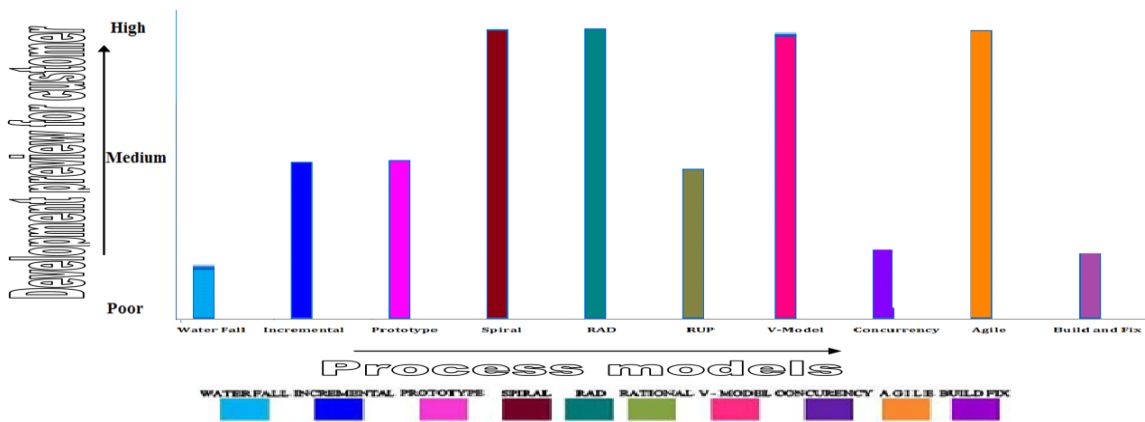
**Project development progress visibility**



**Development preview for customer in various phases:**

All most two parameters have similarities but have minor deviations in it. Waterfall model Only end product can be shown customer. Incremental model In each increment customer can have preview. Each prototype has pre build preview model. In spiral model each spiral iteration customer can have preview. Rad model Have better progress visibility in each independent module development. Rational model ,Medium progress visibility. V-model ,Medium progress visibility. Concurrency model is Less progress visibility. Agile model Each version of build have preview to customer. Build and fix model More number of build required to satisfy customer requirement.

**Development preview for customer in various phases:**



**Cost Of Project**

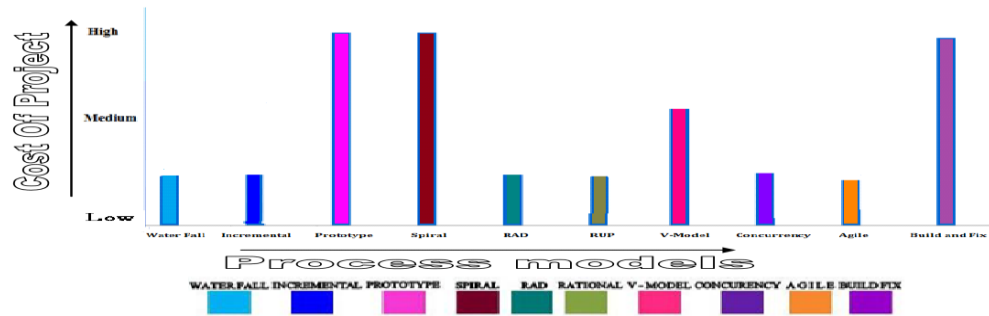
Water fall model Preferred for small projects. Incremental model Preferred for small projects. Prototype model Preferred for large projects. Spiral model Preferred for large projects. Rad model Preferred for medium projects. Rational



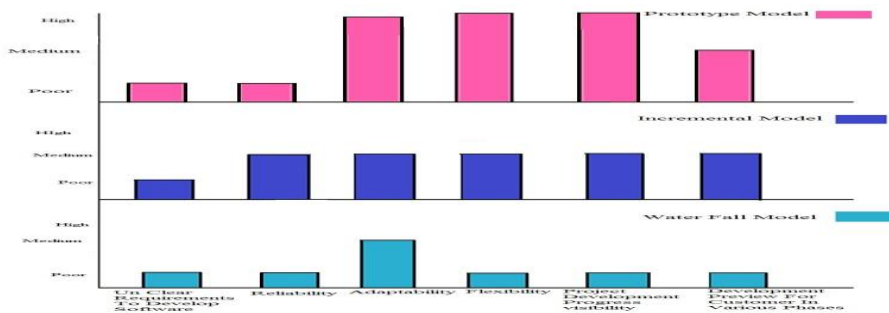
model Preferred for small projects. V-model Preferred for medium projects. Concurrency model Preferred for small

projects. Agile model Preferred for small projects. Build and fix model Preferred for large projects.

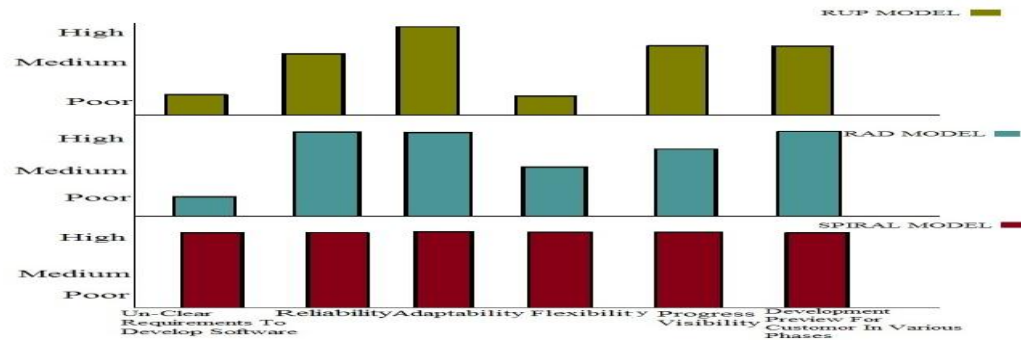
### Cost Of Project



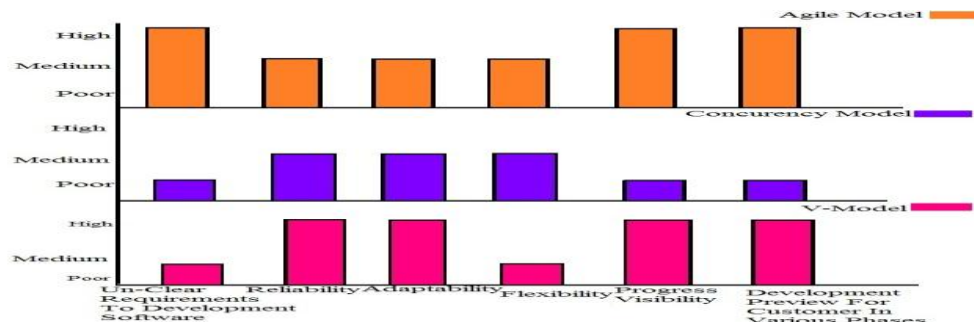
### Overview Of Waterfall Model, Incremental model, Prototype Model using Bar Chart



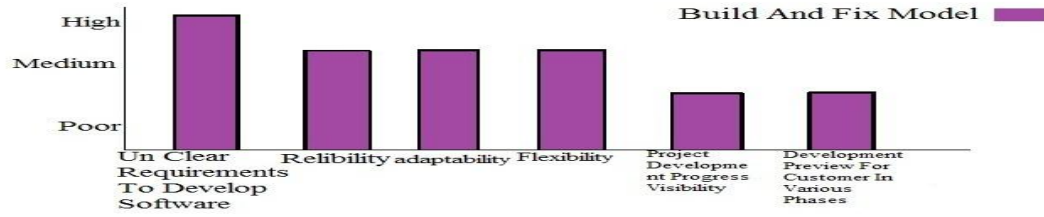
### Overview of Spiral Model, Rad Model, Rational Unified Process Model using Bar Chart



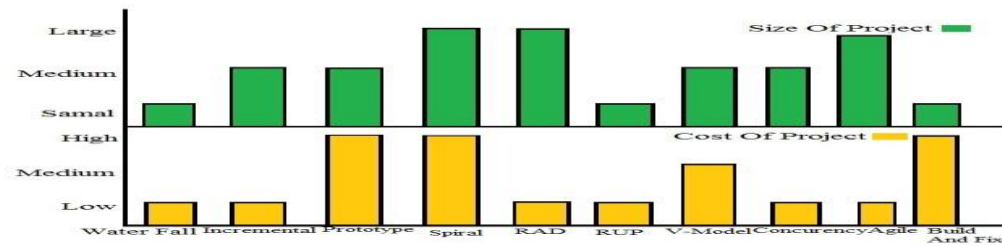
### Overview Of v-Model, Concurrency Model, Agile Model using Bar Chart



**Overview Of Build And Fix Model Using Bar Chart**



**Overview of All Models of Cost of Project, Size Of Project**



**Conclusions:**

Now we have number of software development process models available in society. but awareness on best model with best requirement fulfillment process model selection is difficult. So, Based on comparison of ten software process models, we identified several parameters affecting the process model selection for a project development. we proposed new concept of “Best Selection for Best Model for Best Result”, provide main factors of different software development process models .we select best model for best project. It support this depicts histogram charts to choose the Best selection for best model for best result model.

**References:**

1. Software process –A road map 10[2].1.1.5.2549 pdf.
2. Software process model www. Ics.user/nwscachi/paper/se-emiyc/process-model-se-encsc.pdf.
3. Cugola and c.ghozzi,” software processes a retrospective and a path to the future” software process –improvement and practice/ vol 4, pp101-123,1998.