



## ‘HURRAY’ Boost Modeling Process to Explore Flexible Approach

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**Abstract:** Success of software project development process depends upon feasible formation projects and its development approach. Handle the uncertainty and its impact is big challenge in formulate feasible formation. This study has made earnest attempt to abstractabstruseness of uncertaintyand its root sources reflection in project development process and seek opportunity for handling its threats by feasible formation strategy for making efficient development. This study explores ‘Handling Uncertainty Root Reflections Abstruseness Yield’-(Hurray)with prototype model ‘Selection of software development methodology advisory system (SOSDMAS)’. The goal of this paper is to rectify the present hurdles and hassles in development process by representing feasible and need base formation strategy in the sense of ‘flexible approach’ for development on the basis of ‘Selection of software development methodology advisory system.’

**Key Words:** software development approach, modeling process, Uncertainty, Uncertainty reflection, SOSDMAS-fuzzy expert system

### I. INTRODUCTION

Over the past 50 years, software development practice has evolved from a specialized problem solving and information analysis tool to an industry, but itself traversing a progressive path to sustainable business due to uncertainty and its abstruseness. Though practice driven approach is well known for handling the uncertainty [2, 8]but still software development practice is facing the problem of project failures or overruns [7, 18]. It is quite natural that one can recognizes the question “Why such kind of things happening?”

Generally, success is seated either in luck or wisdom of reducing failure. With this inspiration to rectify the failure part, this study is carried out. This study has made workaholic ardent efforts by way of distinctive permutations and combinations of variables in the technological factors on the basis of relevant literature on “software development productivity and analyze its impact factors to reformulate strategyfor software development to enhances results.

### II. ARTICLE ARCHITECTURE

The aim and objective of this paper is to understand realistic values of the approach and its best practice in handling uncertainty and its rootreflections and its abstruseness.Furthermore, this paper suggests suitable, feasible strategy in the sense of ‘flexible approach’ for need base development process.

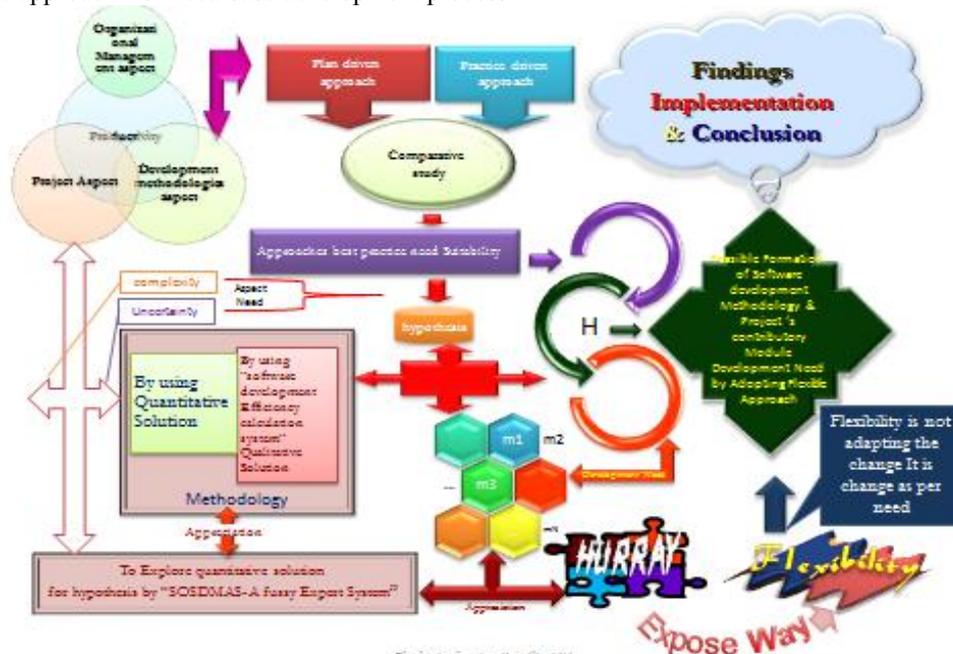


Fig is design by Kardile VV.

Figure 1: Article Foundation Flow Architecture

Section II present article outline diagram. Section III introduces Software development modeling process by its existence, affecting factors, strategies for enhancing software development modeling process. Section IV represents methodology of this study. Section V produces observation and evaluation. Section VI is Suggestion and Implementation. Section VII is concluding and scope of further work.

### III. SOFTWARE DEVELOPMENT MODELING PROCESS

#### 3.1 Existing Software project development modeling process:

Software Project modeling process varies at organization to organization but, normally it involves 'Work Breakdown Structure', 'Requirement analysis', 'Project estimation and schedule designing with consideration of actors like Organization management, Construction and Deployment team, End User or Client [8, 9, and 10]. This process mainly emphasis over understanding 'Project scope' with abstracting functionality and extracting its activity. This abstraction prepared on the basis of projects contributory activity or sub-activity wise with its subsequent formation for providing solution. Then moving forward to the 'Requirement Data or Facts Analysis' for comprehend estimated project with its subsequent state formation of contributory activity or modules aspect. Then allocation of 'Development Methodology' for its construction and Validation of estimated project development, lastly 'Transformation' of project is done.

#### 3.2 Constrains in software development modeling process:

The fundamental task of modeling process is selection of feasible development approach for development process. These selection processes completely depend upon the abstraction level of decision maker. Available literature empathies, developer should choose complementary methods with different biases due to incomplete or unclear requirements specification and with multiple successful software development approaches [2, to 11, 16 and 20].

Plan driven approaches very effective in certain environment but in changeable or uncertain environment it is ineffective due its rigidity. On the other hand we have such a great tool for adopt the uncertainty in the sense of practice driven approach (agile family) but still problem of failures or over runs is remain the same [7, 18]. Furthermore, there are some promising studies addresses 'Hybrid' or 'Mix' approach [11, 19, and 22]. Though this approach is confluence of plan and practice driven approach but it is treated as one type of approach or solution. But one type of approach is not suitable for project development because numerous studies reveal that, every project is unique but having set of contributory module with inconstant uncertainty level.

With such uncertain environment or lack of confidence, one cannot take a decision confidently about the specific outcome [10]. In such situation to formulate feasible formation between project and its development approach is big constrain for the project development lifecycle.

#### 3.3 Challenge for software development modeling Process:

Success of software project development process depends upon feasible formation projects and its development approach. Handle the uncertainty and its impact is big challenge in formulate feasible formation. Though there are numerous uncertainty analysis and assessment methodology available today but that is celebrate at the end of the modeling process. With such uncertainty analysis and assessment model development practitioner is able to know uncertainty source and its level but unable to tackle it because modeling process already done.

Furthermore, there are only three recent promising studies ( M. Ayman AkAhmar (2010) ; Mohammad Taghi Taghavi Fard (2012); Abdel Nasser H. Zaied (2013)) that addresses expert system for selection of software development approach. These publications condensing rule base expert system on the basis of software development methodologies best practices and projects classification based requirement observation.

But, at the initial level of project development client is unable to explain his complete requirement or some time some requirement raises afterword [2]. Furthermore, project is set more than one module with inconsistent uncertainty aspect [5, 6].

In such situation, without recognize uncertainty and its sources it is not possible to recipes feasible formation in development process. With such expert system, there is lot of possibility in handling design approach inaccurately or decision taken is treated hasty decision, it may prove to be wrong later on [6]. Furthermore such decision wills the increases efforts cycle and raises 'Expenditures Mountain'. It is very tedious to pull out development process from such situation. As a result there are chances that development process will get probably over budget. That become one of the strong causes and constrain for trip down or over runs software project. So, to make appropriate selection of development approach or need base development approach is essential in development process.

Here one thing is important that is not consider so far, development approach is not problem, problem is handling the projects contributory modules inconstant level of uncertainty, because every approach is having its own success story. In such situation on can't formulate efficient or feasible development process without recognizing modules uncertainty level.

But in available published literature there is no single notification found that address uncertainty recognition and its handling strategy. In such situation, it is great challenge for modeling process to formulate project and its need base development methodology.

#### 3.4 Threats of software development modeling process:

Above consideration explore level of uncertainty is a root threat in feasible formation of development process. Furthermore, in the phase of modeling, development practitioner comprehend project with its subsequent formation [2, to 11

and 20]. The subsequent formation transfer uncertainty unbounded module to module. In this situation, developer cannot abstract level of uncertainty and its sources. As a result development practitioner fetches the dilemma to choose the development methodology and that increases abstruseness of uncertainty. Furthermore such kind of development process is unable to become habituated for variance situation and raise challenging state or overruns project. So rather than follow or tolerate it, it is very essential to recognize the level and source of uncertainty and bound it at its location. But, in that concern, there is not much more attention reported or received so far.

### 3.5 Opportunity for software development modeling process:

In fact, appropriate formation is not as difficult or puzzling as people think it. It is straightforward; ones understand uncertainty source and its intensity [13, 21]. It is not only literature explanation or laboratory experiment but everyone's personal experience that we are handle such uncertain situation in day to day life with its activation formation not in its subsequence formation on the basis of available knowledge, stability, time in hand as per need base condition.

For example, let's consider the instance of our journey to reach our work place. This process included walking, vehicle driving or riding, lift or steps climbing as a contributory sub-process with traffic status reflections. If we concentrate this instance with its sub-processes then there is major effect of traffic status reflection on some sub-process like 'lift stage, and vehicle driving and riding. Furthermore, if we consider it as in subsequent process then it is very complicated activity due to uncertain aspect of traffic status and its reflection. But usually we are considering it in parallel formation of contributory activation and elaborate it for utilize a need base approach to handle such scenario with flexible and adaptable mode.

Here, if one can try to elaborate the project in its activation formation of module then it is not only the helps to bound uncertainty source but also decrees its abstruseness. Furthermore it is helps to handle it and its reflection at module level. Thus our hypothesis is "Handling uncertainty reflection in project development is produces opportunity for formation of feasible formation".

## IV. METHODOLOGY

### 4.1 Qualitative Solution for hypothesis:

In this section, the methodology of the study has been discussed. The inductive approach with qualitative solution is utilized with application of prototype model "Selection of Software Development Methodology Advisory System" design and developed on the basis of rule base fuzzy expert system and its application and intensity of project.

This module is assist to test estimated hypothesis "Handling uncertainty reflection in project development is produces opportunity for formation of feasible formation".

### 4.2 Illustrative example of using the SOSDMAS

In this section, we have illustrative example by using the SOSDMAS. Let's consider to develop one login screen module as a project for test to estimated hypothesis.

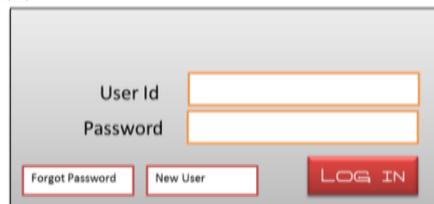
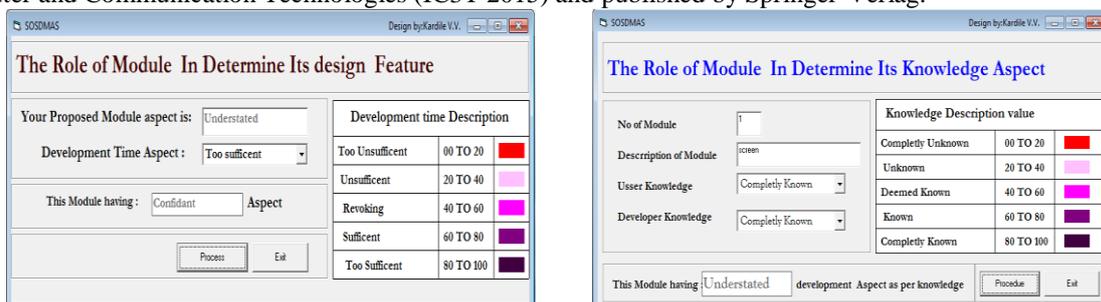


Figure 2: Illustrative Project require screen

This module having three sub activities as: Login facility, Sign up and forgot password. User specifies requirements of 'Log in' form module application that generates and maintains user authentication of administration. It collects password of user and validate it. It allows the new user add information detail. Give facility to recover the forgotten password by one or two step verification.

Illustrate above experimental case study with "Selection of software development methodologies Advisory system" before modeling process is obtained from author's previous paper "Jugaad"-the creativeness For Selection of software development methodology advisory system- Fuzzy expert system presented at 2nd International Conference on Computer and Communication Technologies (IC3T 2015) and published by Springer-Verlag.



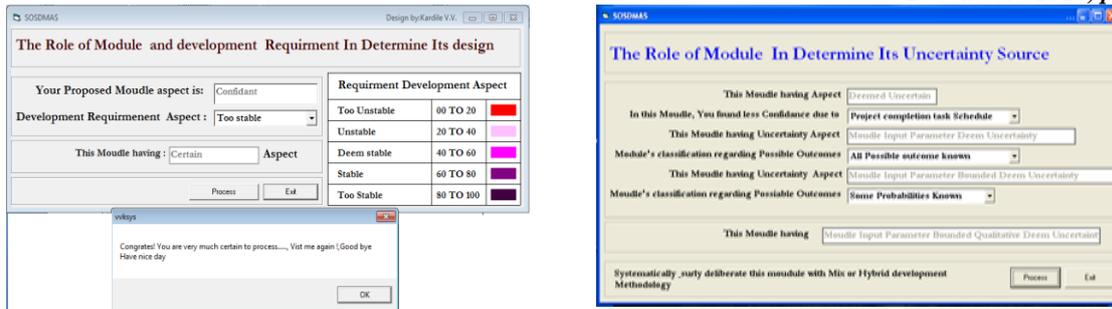


Figure 3: S OSDMAS Screen

**4.3 Observation of result from SoSDMAS:**

Result by exploiting above case study Shown in following table:

Table 1: Module wise Uncertainty level and its allocated development methodology by S OSDMAS

Sr. No	Module	Knowledge level	Stability level	Development time	Uncertainty Level	Allocated development Methodology as per best practice
1	M1	0.85	1	1	Certain	Plan driven
2	M2	0.47	0.35	0.53	Uncertain	Practice Driven
3	M3	0.7	0.50	0.66	Deemed uncertain	Mix approach
<b>Complete project</b>		2.02/3 =0.67	1.85/3 =0.61	2.19/3 = 0.73	Complex	Plan driven

In this table, in ‘red’ color subsequent formation recognitions is presented and in ‘green’ color parallel formation recognition of project contributory modules is presented. Parallel formation recognition is accommodating uncertainty at module separately.

When we consider Subsequent formation hide level of uncertainty and it source. With this formation “Selection of software development methodologies Advisory system” suggests to allocate plan driven approach for development of experimental case study.

As a result there may be chances that estimated project will acquire challenging state because plan driven approach is efficient in experimental case study’s module number one (M1) but when we consider remaining two module plan driven approach is inefficient. That is proven very detrimental for gain best productivity.

To validate above consideration, researcher allocates two teams on same platform (core java) with iterative development approach as per following table.

Table 2: Formation of development team for performance testing of experimental case study development

Team No	Team members	Following contributory model formation of project
I	2 M.Sc. [Computer Science] student	Sequential formation
II	2 M.Sc. [Computer Science] student	Parallel formation

The outcome of above team for develop experimental case study are: here development time is calculated as per student laboratory utilization time.

Table 3: Result of development team by performance testing of experimental case study development

Development Phases	Team –A Development Time (Hrs.)	Team -B Development Time (Hrs.)
Inception	12	10
Elaboration	15	3
Construction	10	12
Testing & Deployment	10	10
<b>Total effort</b>	<b>47</b>	35

Result explores that Parallel formation following team take less development time that is considerable.

**V. OBSERVATION AND EVALUATION**

**5.1 Observation**

The result of above case study by using “Selection of software development methodologies Advisory system” specifies that projects and its contributory module having dissimilar aspect of uncertainty level. It is recognizing differently in sequential and parallel formation because sequent formation is attached one state to other but parallel formation is activated isolated for achieve common goal.

We are observed that,

- ✓ Project's subsequent formation reflects uncertainty from module to module that is proven very detrimental for allocation need base development approach to gain best productivity that is shown in 'Table 1' with red color.
- ✓ Project's parallel formation accommodating uncertainty at module that is very helpful for allocation need base development approach to gain best productivity that is shown in 'Table 1' with green color.

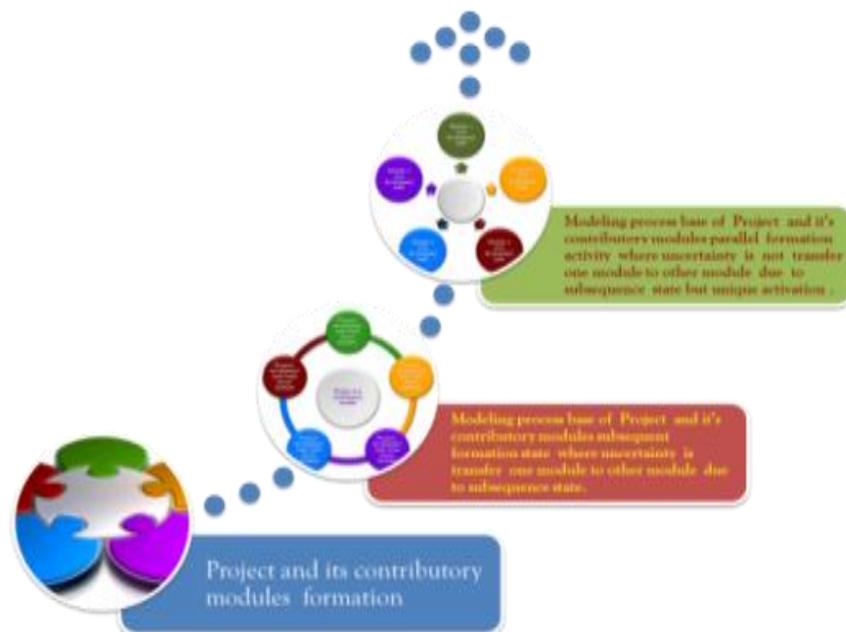


Figure 4: Sequential and Parallel formation of project and its appreciation.

## 5.2 Evaluation

With this consideration, developer must recognize and recipes, the project and contributory modules development need (level of uncertainty and complexity) before modeling process. It will assist to development practitioner for reduce impact of uncertainty. But subsequent formation transfers the uncertainty module to module or hides the uncertainty root source. As a result development practitioner mistaken its existence and allocate unsuitable development methodology for development that will increase chance of expensive development or over runs or failure.

Above consideration directly indicate "Handling uncertainty reflection in project development is produces opportunity for formation of feasible formation".

So, it is essential to recognize uncertainty and its root sources with parallel formation before modeling process for allocating suitable development methodology for development that will increase chance to get good result. But here development practitioner must be flexible for allocating need base development approach as corresponding to modules in development process. on the basis of CMMI Level-2 and 3, "To make certain that obtainable process are maintain in time of stress, organization use causal analysis to identify and resolve issues affecting performance and promote the dimension of best practices by Organizational Process Performance, Quantitative Work Management.

## VI. SUGGESTION AND IMPLEMENTATION

### 6.1 Suggestion:

The configuration of 'Project Modules' and 'Software Development Methodology' should be on the need base, means flexible. Application of such project or software development certainly enhances the productivity. But to establish such kind of configuration, it requires flexibility in development approach because recognizing and adopting uncertainty is not sufficient. Here there is need to change as per terms and conditions in available situation and provide freedom to choose methodology for project development which may produce better performance. But, in that concern, there is not much more attention reported or received in the scenario.

### 6.2 Implementation:

Today's Software development firms or IT organizations are comfortable with different software development methodology but secret of software success focused on one methodology is not suitable for every project [11, 19, and 22]. In this consideration if we consider project aspect and try to provide the liberty to development team to mold the software development process according to project and its development needs, that will give better result.

The level of organization's process for project development management may be different according to the organization to organization. Software projects are very varied [16, 20]. With available development methodologies own artifacts [6]. So, there is no standard process for development but it needs to address similar issues contain process assemblies.

At initial stage, scope of process rallies, Here, if development practitioner carried out uncertainty recognizes and recipe process for clarification and validation of contributory modules level of uncertainty then Planning process assemblies will able to allocate project's need base development approach as per its best practice for making efficient development.

After planning process finalised the launching or executing process assemblies carried out as per allocated development methodology oriented development team. Then Monitoring and Controlling process assemblies as per its allocated development team and approach. At finally 'Closing Process Assembly' with Testing, including bug fixing, and the final build were delivered to the client for user acceptance testing and business scenario testing. Any changes to the functionality or requirements were logged and implemented, using the uncertainty recognizes and recipe process for further iteration.

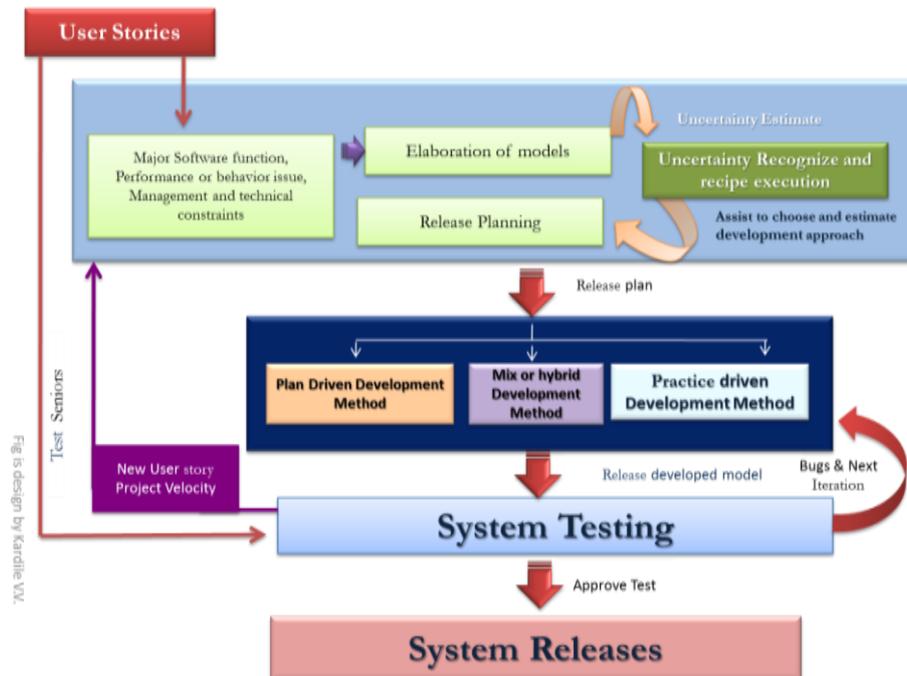


Figure 5: Proposed structural design of flexible approach.

## VII. CONCLUSION AND SCOPE OF FURTHER WORK

### 7.1 Conclusion:

In this section this study hope and trust that flexible approach is very useful to avoid confusion in formation of project and its developing methodology as per project aspect and best practice. It should provide freedom to development practitioner for choosing needbase formation by taking into account the certainty or uncertainty aspect separately.

### 7.2 Scope of further work:

As per literature review it is yet to publish notification, which can explores the policy for decreasing the ratio of project challenging and cost overrun /time element. This study found out that, there is need to recognize level of uncertainty and its sources as per projects contributory modules parallel activation formation before modeling process. That will assist to the developer to choose and design appropriate software development methodology for efficient development.”

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