

**Final Term Paper (Spring - 2020)**  
**Software Project Management**

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**Semester: 8th** **Date: 30 June, 2020**

**Time: 6 hours**

**Total Marks: 50**

**Instructor: Sir Zain Shukat**

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**Q No. 1: What were the results of survey conducted by CHAOS in 1995. (10)**

**Answer:**

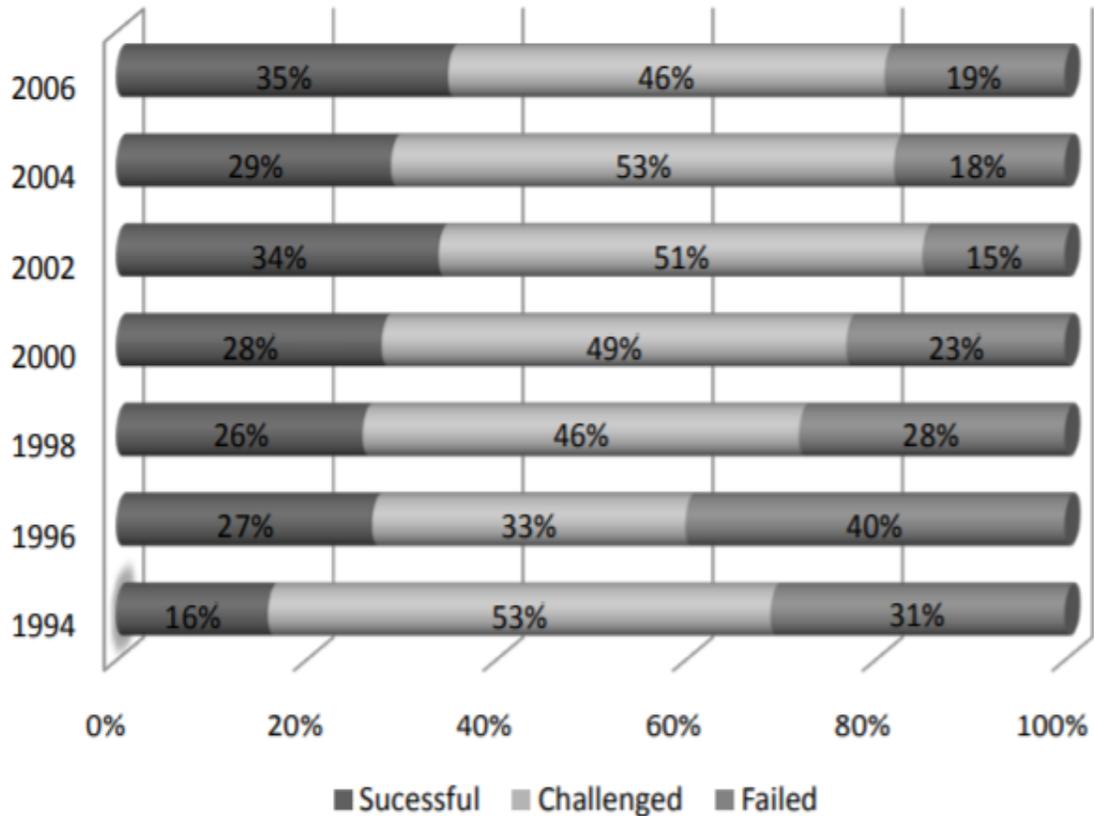
The Standish (Chaos) report has been published for a number of years now and it is always a sobering read for those involved in project management and in particular, projects involving computer technology.

The 1995 report indicated that “a staggering 31.1% of projects will be cancelled before they ever get completed. Further results indicate 52.7% of projects will cost 189% of their original estimates. The cost of these failures and overruns are just the tip of the proverbial iceberg. The lost opportunity costs are not measurable, but could easily be in the trillions of dollars. One just has to look to the City of Denver to realize the extent of this problem. The failure to produce reliable software to handle baggage at the new Denver airport was costing the city \$1.1 million per day. Based on this research, The Standish Group estimates that in (1995) American companies and government agencies would spend \$81 billion for cancelled software projects. These same organizations would pay an additional \$59 billion for software projects that will be completed but will exceed their original time estimates. Risks are always a factor when pushing the technology envelope, but many of these projects were as mundane as a driver's license database, a new accounting package, or an order entry system. On the success side, the average is only 16.2% for software projects that are completed on- time and on-budget.”

## Summary of factor ranking for challenged and failed projects

Rank	Factors for Challenged Projects	Factors for Failed (Impaired) Projects
1	Lack of user input	Incomplete requirement
2	Incomplete requirement	Lack of user input
3	Changing requirement and specification	Lack of user resources
4	Lack of executive support	Unrealistic expectation
5	Technology incompetence	Lack of executive support
6	Lack of user resources	Changing requirement and specification
7	Unrealistic expectation	Lack of planning
8	Unclear objectives	Did not need it any longer
9	Unrealistic timeframes	Lack of IT management
10	New technology	Technology illiteracy

## Summary of Chaos Studies from 1994 to 2006 (Marchewka, 2009).



Apparently there is abundant chance and a need to improve its probability venture achievement. Hence, the reason for this investigation is to give a rich subjective examination of the difficulties and choices that prompted the disappointment of a significant U.S. government venture. Thusly, the data and information gathered for this investigation was accessible from various open sources since venture disappointments including open cash are recorded. The exploration question is whether this venture disappointment was novel or did it share.

Qualities with other bombed IT anticipates. This can be practiced by leading a contextual analysis of the FBI's bombed Virtual Case File (VCF) undertaking and contrasting the discoveries with a few experimental overviews of bombed IT anticipates. This may give important understanding with regards to why specific undertakings flop and how certain occasions or choice may improve the probability of disappointment

## **Q No. 2: What is trilogy and what terms and conditions were defined in that?**

### **Answer:**

A trilogy is a set of three works of art that are connected and can be seen either as a single work or as three individual works. They are commonly found in literature, film, and video games, and are less common in other art forms. Three-part works that are considered components of a larger work also exist, such as the triptych or the three-movement sonata, but they are not commonly referred to with the term "trilogy

Following quite a while of creating data frameworks without a larger authoritative view, the FBI wound up with an "extemporized" IT foundation with in excess of 50 free application frameworks written in various programming dialects and running on dissimilar stages. In September 2000, Congress affirmed \$379.8 million for a multiyear venture that was known as the FBI Information Technology Upgrade venture under the heading of FBI Director Louis Freeh. As of now, the FBI didn't have a CIO, documentation of its present frameworks, or an arrangement for revamping them.

Be that as it may, the FBI Information Technology Upgrade venture was in the long run isolated into three sections and renamed Trilogy. The Trilogy venture focused on updating the office's 56 field workplaces and 22,000 operators and care staff with new work areas and servers, Web-empowering some of the most significant insightful database frameworks, and, in particular, a Virtual Case File (VCF) framework that would automate the obsolete paper-based Automated Case Support (ACS) framework .

The VCF was imagined to help FBI specialists proficiently share information about cases in progress, particularly psychological oppressor examinations. The framework would likewise empower specialists anyplace in the United State rapidly to look through different reports and permit them to interface potential leads from various sources. What's more, the VCF would incorporate a case the board framework, a proof administration framework, and a records the board framework. The expectation was to take out the requirement for FBI representatives to check printed version reports into PC documents. A specially evolved framework was required since no current business programming bundles were accessible that address the organization's issues when the task started in 2001. In the spring of 2001, improvement of the VCF programming was contracted to Science Applications International Corp. (SAIC) in San Diego, California and was to be finished by late 2003.

**Post 9/11** In September 2001, multi week before the 9/11 fear monger assaults, Robert Mueller supplanted Louis Freeh as the chief of the FBI. The fear based oppressor assaults exposed the insufficiencies of the FBI's data frameworks. The FBI inferred that it was losing knowledge as quick as it could accumulate it.

**Q No. 3: In case study, Matthew Patton was one of the few persons who identified issues in this project. What were his findings? (10)**

**Answer:**

Matthew Patton was recruited as a component of the security group which looked into the plan reports depicting VCF's general structure, rationale, and UI. Patton held a B.S. in data and choice frameworks from Carnegie Mellon College and filled in as a cadet in the U.S. Aviation based armed forces Hold Officials' Preparation Corps. He additionally had gone through four years of military obligation in the Workplace of Secretary of Protection in the Pentagon where he built up an online database framework used to design the Division of Resistance's \$400 million spending plan.

**Matthew Patton finds the accompanying issues:**

Patton before long understood that SAIC was not intrigued by his suppositions and was told "not to cause trouble" when he started communicating his interests with respect to likely security and configuration issues. As he expressed, "They were attempting to plan the framework format and afterward the entire application rationale before they had in reality even made sense of what they needed the framework to do" (Goldstein, 2005). For instance, Patton contended that the 800 or more pages of necessities were too enlarged and muddled.

Likewise, Patton griped that SAIC made no endeavors to control costs with the 200 developers who were on staff to "make work" when just two or three dozen would have been adequate. Patton brought up, "The Organization's disposition was that it's others' cash, so they'll consume it all over they need to".

Patton likewise guaranteed that SAIC endeavored to compose a great part of the VCF code when an off-the-rack item like Novell's GroupWise email framework was at that point being utilized by the FBI and would have been more suitable to use than coding another email application without any preparation. Out of dissatisfaction, Patton presented a message on Info Sec News that referenced he was taking a shot at the Set of three case the board framework and that nobody was paying attention to security issues. In his posting, he requested assistance connecting with somebody at the FBI who might mind and request responsibility from its contractual workers. He finished with the inquiry: "Shouldn't somebody give it a second thought?" (Goldstein, 2005).

## **Q No. 4: Why trilogy failed and what were the reasons of its failing? (15)**

### **Answer:**

Some FBI operators allude to the Set of three tasks as "Disaster," since it shared attributes of many bombed ventures: the best expectations, disastrous correspondence, and stunning waste (Knorr, 2005). To all the more likely comprehend this disappointment; the US National Foundation of Science gave a top to bottom examination that diagrams the purposes behind the disappointment of the Set of three program and the VCF framework. The investigation is classified "A Survey of the FBI's Set of three Data Innovation Modernization Program," by Mc-Groddy and Lin (2004), and four noteworthy territories were distinguished: endeavor engineering, framework configuration, program and agreement the board, and HR.

As per Mc-Groddy and Lin (2004), the FBI fizzled "as an issue of its most noteworthy need" in making an endeavor design to characterize a key perspective on its objectives, strategic requirements that could be connected through data innovation to its tasks and procedures. Therefore, the FBI couldn't decide how such ventures could be attached to its operational goals. Additionally, the board of trustees inferred that "the FBI's endeavors and results in the territory of big business design are late and constrained, and miss the mark regarding what is required."

The **second** zone of concern announced by Mc-Groddy and Lin (2004) fixates on Framework Structure, or, all the more explicitly, the FBI's arrangement for a "streak cutover" from the old ACS to the new VCF. Their conclusion was that a restricted introductory rollout would give an early admonition to possible issues. Besides, the board of trustees communicated its anxiety that the quick advancement approach and packed undertaking plan presumes accomplishment at each stage and didn't give satisfactory thought to testing. This would as a result execute a model all through the authority where clients would in all likelihood be the analyzers after usage.

**Thirdly**, the advisory group communicated genuine concerns with respect to the methodologies and procedures used to build up its IT foundation and applications. A significant shortcoming incorporated the absence of "client confirmed models in its applications advancement forms." Even the most experienced IT experts can't foresee the entirety of the practical prerequisites and particulars, so interior and contracted designers should utilize broad prototyping and ease of use testing with genuine clients. The thought is that iterative improvement with abundant client input and inclusion improves the probability of conveying a framework that addresses their issues.

**Finally**, Mc-Groddy and Lin (2004) distinguished HR and outer imperatives as the fourth region of concern. They bring up that the FBI doesn't have a sufficient human asset and aptitude base expected to manage the FBI's modernization venture. For instance, they call attention to that the FBI had an extraordinary lack of experienced venture administrators, contract supervisors, and senior IT chiefs with great relational abilities. Then again, the FBI employed exceptionally qualified IT experts "without expecting them to make over the top money related penances, and to obtain staff

from different offices and even from the private area." Moreover, the FBI works under various outer requirements that restrain its adaptability.

**instance For**, congressional endorsement is expected to take any activities or roll out any improvements that surpassed \$500,000. The board of trustees brought up that such imperative is conflicting with the desire that the FBI could move rapidly to update it and manage new difficulties.

The Turmoil Bedlam considers (Standish Gathering, 2005) likewise report factors for ineffective activities, and accordingly may give some knowledge with regards to why the VCF venture fizzled. For instance, Table 1 sums up the task factors for not really effective ventures. This rundown gives an intriguing string that can be applied to the VCF venture since apparently the VCF venture experienced a considerable lot of these equivalent illnesses.

## **Sessional Assignment,**

**Course: -** Software Project Management

**Program: -** BS (CS), BS-SE

**Dated: 5 Jun 2020**

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**Class and Section: BS SE (A)**

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**Q1: Implement cocomo II model in any Language (C++, c#, Java, Any other)**

## **cocomo II model**

Provide accurate cost and schedule estimates for software projects  
Enable organizations to easily recalibrate, tailor, or extend COCOMO II to better fit their unique situations  
Provide careful, easy-to-understand definitions of the model's inputs, outputs, and assumptions

- Provide a constructive model
- Provide a normative model
- Provide a evolving model

```
#includestdio.h
```

```
#includeconio.h
```

```
#includemath.h
```

```
int fround(float x)
```

```
{
```

```
    int a;
```

```
    x=x+0.5;
```

```
    a=x;
```

```
    return(a);
```

```
}
```

```
void main()
```

```
{
```

```
float effort,time,staff,productivity;
```

```
float
```

```
table[3][4]={2.4,1.05,2.5,0.38,3.0,1.12,2.5,0.35,3.6,1.20,2.5,0.32};
```

```
int size,model;
```

```
char mode[][15]={Organic,Semi-Detached,Embedded};
```

```
clrscr();
```

```
printf(nEnter size of project (in KLOC) );
```

```
scanf(%d,&size);
```

```
if(size=2 && size=50)
```

```
model=0;  organic
```

```
else if(size50 && size=300)
```

```
model=1;  semi-detached
```

```
else if(size300)
```

```
model=2;  embedded
```

```
printf(nThe mode is %sn,mode[model]);
```

```
effort=table[model][0]pow(size,table[model][1]);
```

```
time=table[model][2]pow(effort,table[model][3]);
```

```
staff=efforttime;
```

```
productivity=sizeeffort;
```

```
printf(nEffort = %f Person-Month,effort);
```

```
printf(nnDevelopment Time = %f Months,time);
```

```
printf(nnAverage Staff Required = %d Persons,fround(staff));
```

```
printf(nnProductivity = %f KLOCPerson-Month,productivity);
```

```
getch();
```

```
}
```