Opportunity Cost

# A

### SYNOPSIS ON

“**Opportunity Cost” Presented by: - SY-IT STUDENTS**

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**UNDER THE GUIDANCE OF**

**Prof.P.A.Tamgave**



**DR. J. J. MAGDUM COLLEGE OF ENGINEERING, JAYSINGPUR.**

# DEPARTMENT OF INFORMATION TECHNOLOGY. YEAR

**2022-2023**

### DR. J. J. MAGDUM COLLEGE OF ENGINEERING, JAYSINGPUR. DEPARTMENT OF INFORMATION TECHNOLOGY.

**CERTIFICATE**

This is to certify that,

### Mr. Hulwan Shantanu Jaydeep

### Mr. Jadhav Sanket Shivaji.

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### Mr. Kalel Avishkar Bharat

Students of Second Year Information Technology of Dr. J. J. Magdum College of Engineering,

Jaysingpur has submitted project Synopsis on the subject

# “Opportunity Cost”

Under my supervision and guidance in a satisfactory manner in the academic year 2022 – 2023 Sem IV.

Place: Jaysingpur.

Date:

**GUIDE HOD PRINCIPAL**

**Prof. P. A. Tamgave Prof. R. A. Bharatiya Prof. S. B. Patil**

Opportunity Cost

# Academic year 2022-2023

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Dr. J. J. Magdum College of Engineering, Jaysingpur 1

### ABSTRACT

Welcome to Opportunity Cost! It is an international collegiate programming (ACM-ICPC) Problem in which priority-based concept. There is x is price, y is performance and z are user- friendliness. In these problem statement you are forced to make some sacrifices the aspects you care about against each other and choosing the phone that achieves the best compromise. (where “best” of course depends on what your priorities happen to be).

One way of measuring this sacrifice is known as the opportunity cost, which (for the purposes of this problem) we define as follows. In this problem statement we assume that these values are measured on a comparable numeric scale higher is better. Example of these problem statement is n available phones, and the values (Xi, Yi, Zi) represent the (price, performance, user-friendliness) of the ith phone, then the opportunity cost is defined as n= number of available phones, x = price of the phone, y= performance of the phone, z= user-friendliness.

### INTRODUCTION

Opportunity cost is the value of the next best thing you give up whenever you make a decision. It is “the loss of potential gain from other alternatives when one alternative is chosen”. The idea of opportunity cost was first begun by Johan Stuart Mill. The utility has to be more than the opportunity cost for it to do be a good choice in economic.

Principle of opportunity cost is that the cost of one item is the lost opportunity to do or consume something else; in short opportunity cost is the value of the next best alternative. The concept of opportunity cost (for alternative cost) expresses the basic relationship between scarcity and choice. If no object or activity that is valued by anyone is scarce, all demand for all person and in all period can be satisfied.

Opportunity cost is the potential profit that an individual, investor, or business loses when choosing one alternative over another. Opportunity cost apply to many aspects of life decision. Often, money becomes the root causes decision-making. If you decide to spend money on a vacation and you delay your home’s remodel, then your opportunity cost is the benefit living in a renovated home.

The concept of opportunity cost helps us to choose the best possible option among all the available option. It helps us use every possible resource tactfully and efficient and hence, maximum economic profits. Opportunity cost is the cost of taking one decision over another. This is not only financial, but also in time, efforts and utility. Opportunity cost can lead to optimal decision making when factor such as price, time, performance, user-friendliness is considered. It’s considered three potential options and the benefits of each.

Most important consideration is: -

1. Price.
2. Performance.
3. User-friendliness.

### Literature Review

1. This paper was presented at the INET-YSI Virtual Plenary, History of Economic Thought Working Group, on 13th November 2020. I thank the participants for their comments. Dr Alex Thomas and Dr Ajit Sinha for their suggestions on the draft. The research assistance from Ms. Tess Kurian, Ms. Namitha V, and Ms. Dhanusha Prabhu. This work is dedicated to the first batch of students to graduate from the Bengaluru Dr. B. R. Ambedkar School of Economics University, who also motivated this research question.

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### RELEVANCE OF WORK

Opportunity cost is the value or benefit of an alternative choice compared to the value of what is chosen. The concept of opportunity cost is used in decision-making to help individuals and organizations make better choices, primarily by considering the alternatives.

Opportunity Cost helps a manufacturer to determine whether to produce or not. He can assess the economic benefit of going for a production activity by comparing it with the option of not producing at all. He may invest the same amount of money, time, and resources in another business or Opportunity.

Therefore, he will be able to decide which option gives him more returns and to opt for production or not.

This concept enables a manufacturer to decide what to produce. The opportunity cost of building a product is the loss of the opportunity to provide another product. A producer may choose to go for product A after evaluating the benefits he will derive if he produces product B.

### ADVANTAGES:

1. Awareness of lost Opportunity.
2. Relative price.
3. Evaluation of various Alternative.
4. Identification of Relative Profitable Opportunity.
5. Draw attention to balancing automated and manual testing.
6. Benefits as well as cost.
7. Risk mitigation capability.
8. More realistic comparison between automated and manual testing.

### Benefits of opportunity cost:

* 1. Brands Will Use VR to Improve Customer Loyalty.
  2. There Will Be Changes in Teleconferencing.
  3. Virtual Reality Will Improve E-Commerce for Products That Require Fit
  4. There Will Be Changes in the Education Market.
  5. There Will Be an Improved Design Process for Products.
  6. VR Will Offer the Opportunity to Have an “Anywhere” Experience

**Objective:**

The objectives of solving the given problem statement include:

1. Practicing programming skills: The problem statement requires writing a C++ program to solve the problem using dynamic programming. This provides an opportunity to practice programming skills and implement algorithms using C++.

2. Understanding probability and statistics: The problem involves calculating the expected value of a sum of random variables. Solving the problem requires a good understanding of probability and statistics, including concepts such as random variables, expected value, and probability distributions.

3. Enhancing problem-solving skills: The problem statement requires the application of dynamic programming techniques to efficiently solve the problem. This helps enhance problem-solving skills and develops an algorithmic thinking approach.

4. Learning new concepts: The problem statement involves a variety of concepts such as dynamic programming, expected value, and probability distributions. Solving the problem helps in gaining a deeper understanding of these concepts and their applications.

5. Developing logical reasoning skills: The problem statement requires logical reasoning skills to understand and formulate the problem, as well as to develop and implement a solution using dynamic programming techniques.

**Algorithm:-**

* 1. Start.
  2. Construct CEM for a given Assignment Problem. First, we balance CEM if it is not. Let the balanced CEM be A with n rows and n columns.
  3. If the given AP is maximization problem, then we first convert it into minimization Problem by subtracting all the cost value of the cost matrix from the highest cost value in that matrix.
  4. Find the difference between the smallest and next smallest value in each row ( we call this difference, the Row Opportunity Cost (in short ROC)) and write them against the Corresponding.
  5. Identify the row with the largest opportunity cost. The tie in largest opportunity cost can e resolved by choosing a row with least cost. Now, choose the cell with the smallest cost in that selected row as an assigned cell. If Cij be the assigned cell in this step, then delete ith row and jth column so that the new CEM is obtained with (n-r) rows and (n-r) columns after rth iteration ( we call this new CEM, the Reduced CEM).
  6. Repeat Step 3 and Step 4 to reduced CEM obtained in the previous iteration until all jobs are assigned unequally.
  7. End.

**Flowchart: -**

Good and Services

Scarcity

Choice

Select Items

Cost

Unlimited Source

Limited Source

### PROPOSED WORK

We will be using unreal C++ to package our app. We will use C++ concept and this problem is solved. This problem is solved in future the people give the importance for then people choose the any option. We have seen complete video guide for how to problem is solved. We will discuss this problem for teacher.

**Hardware Requirements:**

In hardware requirements we require all those components which will provide us the platform for the development of the project. The minimum hardware required for the development of this project is as follows-

Laptop – Dell G15

Processor – i5

## Software Requirements:

Software’s can be defined as programs which run on our computer. It provides the relationship between the human and a computer. It is very important to run software to function the computer. Various software’s are needed in this project for its development.

Which are as follows: - Language: C++

**PROPOSED METHODOLOGY**

We aim to bring real time Opportunity cost is the profit lost when one alternative is selected over another. The concept is useful simply as a reminder to examine all reasonable alternatives before making a decision.

### USER INTERFACE:

1. ACQUISITION OF NEW CUSTOMERS:

A successful UI design contributes to a positive user experience, which is a competitive advantage. The effort to provide a consumer-tailored interface may be a brand factor differentiator. In this way, it attracts new customers and consequently increases sales. Thus, the bet on user interface design is able to enhance business, maximizing revenue opportunities.[4]

1. INCREASED CUSTOMER ENGAGEMENT AND RETENTION:

The development of an interface to better navigate and simplify research attracts not only new users but also makes them want to continue their digital experience. In this way, there is a lower probability of bounce and a higher conversion rate. A well-designed user interface encourages customer engagement, which leads to becoming more loyal to the brand. This is very important, since in the current digital environment, with increasing competition and rapid technological advancements, it is essential that business invest in customer retention strategies.[4]

1. LOWER DEVELOPMENT COSTS:

A well-planned design from the start avoids future problems. This includes any training needs and interface support, such as correcting navigation errors, eliminating non-relevant functions and features, or adjusting the design to be accessible and functional. All of this involves high costs. Thus, an intuitive and user-friendly interface benefits not only the users but also the business, as it causes fewer problems and frustrations to designers and avoids additional costs and features. The projection of the user interface design, when done well, reduces costs, time and effort throughout the later stages, which means that the strategic decisions taken at the start of the project determine the cost and performance in the future.[4]

1. LOWER CUSTOMER SUPPORT COSTS:

Usually, users express doubts or difficulties when navigating the interface. However, if the interface is intuitive, customer contact with the support service will be less frequent. This way, the company benefits by reducing costs in customer support. A simple and functional interface minimizes occurrences of errors, doubts and unwanted actions in the navigation process, avoiding customer support costs

[4]

### FACILITY AVAILABLE:

**Facilities Available:**

* Microsoft visual studio code.
* Atom by GITHUB.
* Laptop.
* SDD 512 GB
* Window 11.
* ACM ICPC world Finals 2020-KTH.
* ACM ICPC – Top-coder.

### REFERENCES

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* 1. Git Hub: https://github.com/SnapDragon64/ACMFinalsSolutions/tree/master/finals2020

**PROJECT TIMELINE: -**

* **Conclusion**

To find the Opportunity Cost for number of people ‘t’ where input are x , y , z.

whereas

x = price of the phone.

y= performance of the phone.

z= user-friendliness.

### Guide: Student:

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