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# ***UNIVERSAL SWAP ANALYSIS***

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***FM & IT Excel Project***



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***FY A - 34***

# *Universal Pool Analysis*

## **Excel Sheet Contents**

Sheet 1: Information Regarding Part 1 & 2 of the Question.

Sheet 2: Information Regarding Part 3 & 4, total participants, revenue & costs

Sheet 3: Information Regarding New Pool of International Participants  
(Revenue & Costs)

Sheet 4: Information Regarding the time and value of the New Capacity to be bought.

Sheet 5: Information Regarding G & A Costs of the firm.

Sheet 6: Information Regarding Advertising Costs of the firm.

Sheet 7: Information regarding Total Revenue and Total Costs.

Sheet 8: Information Regarding Pre-Tax Benefits of the firm.

Sheet 9: Information Regarding Working Capital of the firm.

Sheet 10: Solving of Q1 and finding After Tax Incremental Cash Flow

Sheet 11: Calculation of NPV from Q1 Cashflows for Q2

Sheet 12: Calculation of IRR from Q1 Cashflows for Q2

Sheet 13: Calculating New Cashflow and NPV and Solving for Q3

Sheet 14: Calculating IRR for Q3

Tax Rate: 10%

WACC: 11%

Inflation Rate: 1.5%

## **SHEET 1**

### ***Part 1: R & D Expense***

R&D Expense: **Only 1 Expense** but its wont comeback even if the project doesn't start or stops midway

### ***Part 2: Infrastructure Costs***

**Infrastructure Investment** of \$1 Billion made in year 1, which depreciates till salvage value of \$200 Million. Per year Depreciation calculated as will provide us tax benefit in future.

## **SHEET 2**

### ***Part 3: No. of Participants***

Total No. of Participants for **US-Russia & International** calculated for both cases.

With & Without Alternium Considered.

Increase in No. of Participants are as follows:

	US & Russia	International
With Alternium	5%	10%
Without Alternium	5%	8%

### ***Part 4: Revenues & Costs of existing participants***

Total Revenue for each Alternium Participants is **\$100/yr** increasing @ inflation rate of **1.5%**

Total Revenue for each Without Alternium Participants is **\$100/yr** increasing @ inflation rate of **1.5%**

Total Costs for each Alternium Participants is **\$36/yr for US-Russia & \$48/yr for International**, increasing @ inflation rate of **1.5%**

Total Costs for each Without Alternium Participants are **\$36/yr for US-Russia & \$48/yr for International**, increasing @ inflation rate of **1.5%**

***Total Revenue and Costs were found by multiplying Cost and Revenue with No. of Participants***

### **SHEET 3**

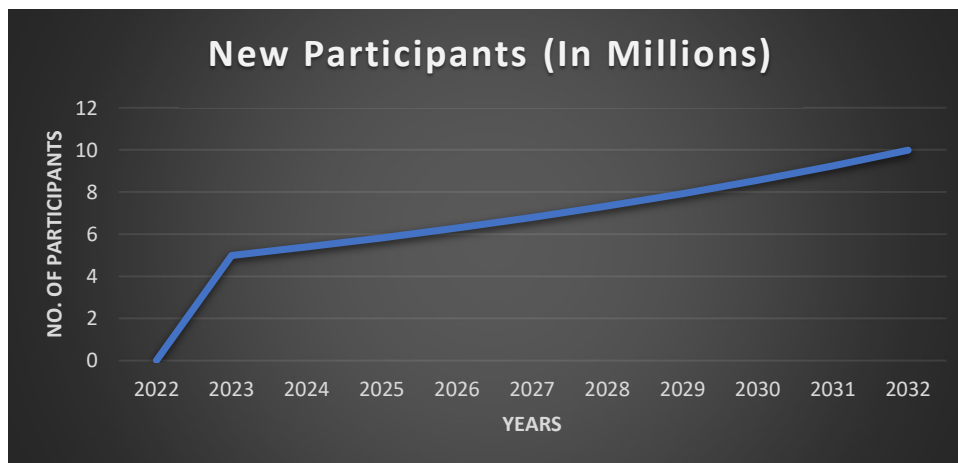
#### **Part 5: International Participants Revenue & Costs**

New Pool for international Participants started with **5 Million Participants** in year 1, which increased @ **3%/yr**

Revenue from them is Half of the original revenue charged, which is **\$50/yr**, increasing @ **1.5% each yr**

Costs on them would be 60% of the cost on International participants, which is **\$28.8/yr**, increasing @ **1.5% each yr**

**Total Costs and Revenues are calculated.**



### **SHEET 4**

#### **Part 6: New Capacity**

We find the **maximum capacity of the pool**. According to the calculations, we need to find the time when capacity is exceeded and we shall buy a new capacity.

Value of capacity is \$600 Million in Year 1, increasing @ 1.5%

From this, we ascertain the **time when we need to buy new capacity**.

## **SHEET 5**

### **Part 7: G & A Costs**

G&A Costs for this pool is **10%** of Total Costs Allocated, increasing @ **5%/ year**

From year 2, an additional **\$40 Million** is allocated, which increases @ **10%/ year**

**Total G&A Costs Calculated.**



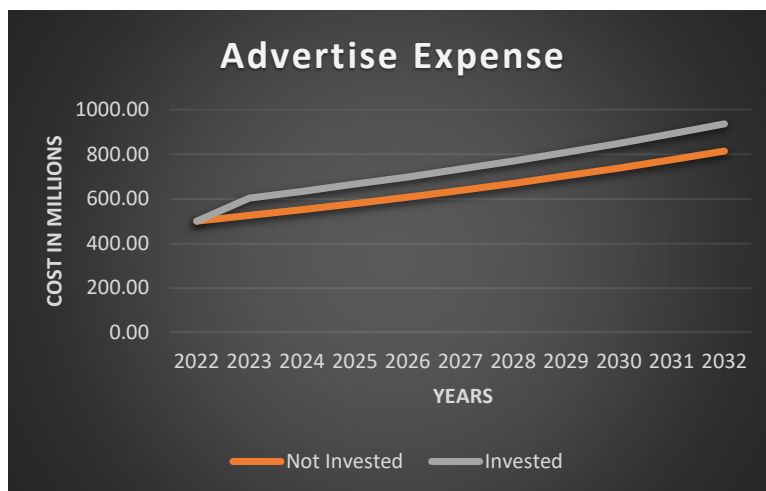
## **SHEET 6**

### **Part 8: Advertising Costs**

If New Pool not started, then advertising expenses increases @ **5% each year**.

If New Pool is invested into, then the **Costs will be 15% Higher than not invested values.**

**Total Advertising Costs Calculated.**



## **SHEET 7**

### ***Part 9: Total Revenue and Costs calculated for With & Without Alternium Pool***

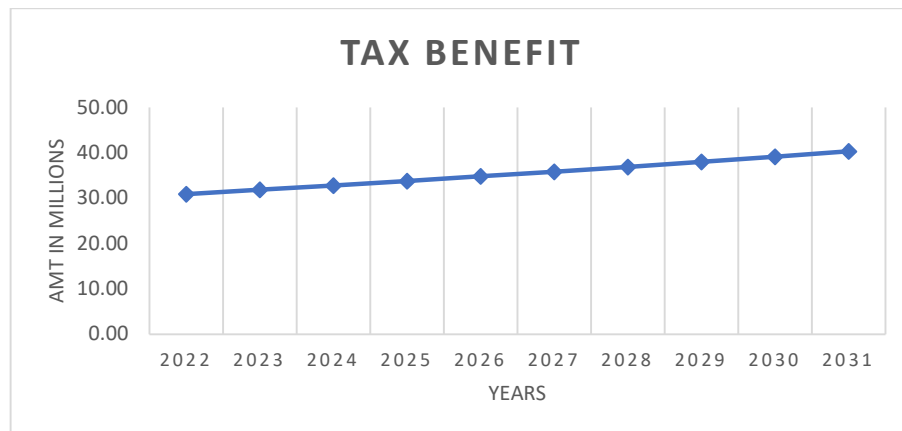
From Data Available in Part 3,4 & 5, a summary of **Total Revenue and Total Costs of the firm** are calculated for **With & Without Alternium**.

We multiply No. of Participants and Revenue/Costs respectively.

## **SHEET 8**

### ***Part 10: Calculation of Pre Tax Benefits***

Tax Benefit for year 1 of **\$30 Million** which increases **@ 3% each year**.



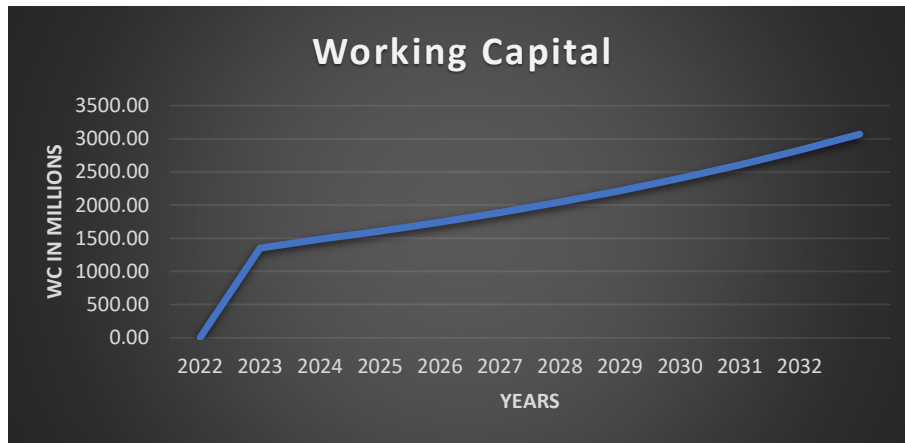
## **SHEET 9**

### ***Part 11: Working Capital Calculations***

From all the Revenues generated, we find the Working Capital of the firm

- Accounts Receivable will be **5%** of total revenue.
- Inventory will be **10%** of total revenue.
- Accounts Payable will be **6%** of total revenue.

***Working Capital = Assets – Liabilities***



## **SHEET 10**

### ***Part 12: After Tax Cashflow***

Based on all Data found, calculated above we find the Cashflows of the project.

- **Things We Add:** Total Revenue
- **Things We Less:** All Costs (Participants, Advertising, R&D, G&A, Infrastructure, New Capacity and Working Capital)

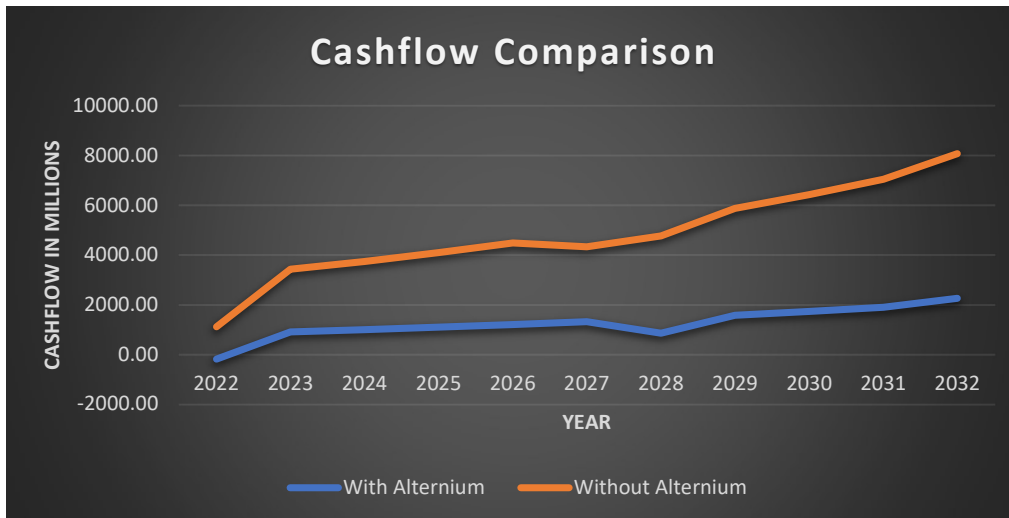
From this this we get **Initial Cashflows of the Project.**

- Now we apply **Tax @ 10%** and less it.
- **Tax on Depreciation is Added back** as it is a benefit, hence **\$8 Million** from year 2 is added back,
- **Side Tax Benefits** are also added.

By this, we get the **After-Tax Incremental Cashflow of the project.**

This process is to be followed for both **With Alternium and Without Alternium Pool.**

Cashflows for both pools will be different as revenues and costs for both projects are different



## **SHEET 11**

### ***Part 13: Finding NPV for above project***

Based on the Data Available and calculations, we put all revenues together and discount them to 2021 year, hence find the present value

#### **For Revenue Section:**

- All Revenues from participants
- Tax on Depreciation
- Tax Benefits
- Working Capital (mentioned in question)
- Infrastructure value at end of year 10<sup>th</sup>, to be sold at book value
- New Capacity bought also sold at book value

#### **For Cost Section:**

- All Costs on Participants
- G&A Costs
- Advertising Costs
- R&D Costs
- Tax

From the above values, we find Total Revenues and Total Costs.

Using **WACC = 11%**, we find the discounting factor for each year.



By multiplying Discounting Factor and Total Costs/Revenues, we find the **Present Values**.

***Net Present Value = Total Inflow PV – Total Outflow PV***

Same process as above is to be followed for Without Alternium Pool to find the Net Present Value.

## **SHEET 12**

### ***Part 14: IRR calculations for the project***

Same Values and formulae are taken, and net present value is found.

By using **Goal Seek**, we select the **IRR Cell to Change**.

After using Goal Seek, we can get the IRR for the project.

Same process can be done for **With and Without Alternium Pool**.

## **SHEET 13**

### ***Part 15: NPV calculations for Q3***

Assumptions:

- The Company goes on till **20 years**. All revenues and costs **increase at the same rate** as earlier. **Year 2022 to Year 2042**
- As capacity gets full, **New Capacity is required to be bought**.
- All other costs also increase subsequently.

We find the **Total Revenue** (Revenue from existing participants, new participants, pre tax benefit and tax on depreciation)

Using **WACC = 11%**, we find the discounting factor and hence find the **Total Inflow Present Value**

Then, we find **Total Costs** (Costs from existing participants, new participants, G&A Costs, Advertising Costs, R&D costs, new capacity costs, working capital, tax), now we find **Total Outflow Present Value**.

From Total Revenue and Costs, we find **After Tax Cashflow**.

Using **WACC = 11%**, we find discounting factor and then Present Value.

**Thus, we find Net Present Value of the project.**

## **SHEET 14**

### ***Part 16: IRR Calculation for Q3***

Using Total Revenue and Costs computed above, we use the same data.

Then we find the Net Present Value of the above data.

Now, by using **Goal Seek**, we find the IRR of the project.

**As the IRR is high, we can conclude that the project is profitable.**

**End Of The Project**

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