EXCEL AND FINANCIAL MATHEMATICS

PROJECT

TARUSH GUPTA | ROLL NO. - 24 | 19.02.2022

Universal Swap

Universal swap is a cryptocurrency exchange which uses a decentralized network protocol. It is fourth largest cryptocurrency exchange overall by daily trading volume.

It operates in four coins – ETH, BTC, USDC & Alternium.

Under this project we are given various information regarding universal swap R & D Expenses, Introductory Costs, Market Potential and Share, Pricing and Unit cost, New Participants, Server facilities and Costs, G & A Expenses, Working capital, Equity and Debt, Tax rates, Macro Data, Cost of capital.

Universal swap is launching new coin Alternium on its platform for which it is intending to create a new liquidity pool. As it turns out, it has proved to be a highly profitable business. It has increased

Its market capital from $650 million in 2019 to around $22 billion in 2022. It cites easy facilitation, transparency, its unique algorithm and the huge spike of interest in the cryptos leading to huge volumes as its reason of success.

Cash flow after taxes (CFAT) is a measure of financial performance that shows a company's ability to generate cash flow through its operations. It is calculated by adding back non-cash charges such as amortization, depreciation, restructuring costs, and impairment to net income.

Subtract the income tax liability, state and federal. The result is the Cash Flow After Taxes. Another method of calculating CFAT is: CFAT = Net Income + Depreciation + Amortization + Other Non-Cash Charges.

TAX RATE – 10%

Question - I

Information Given -

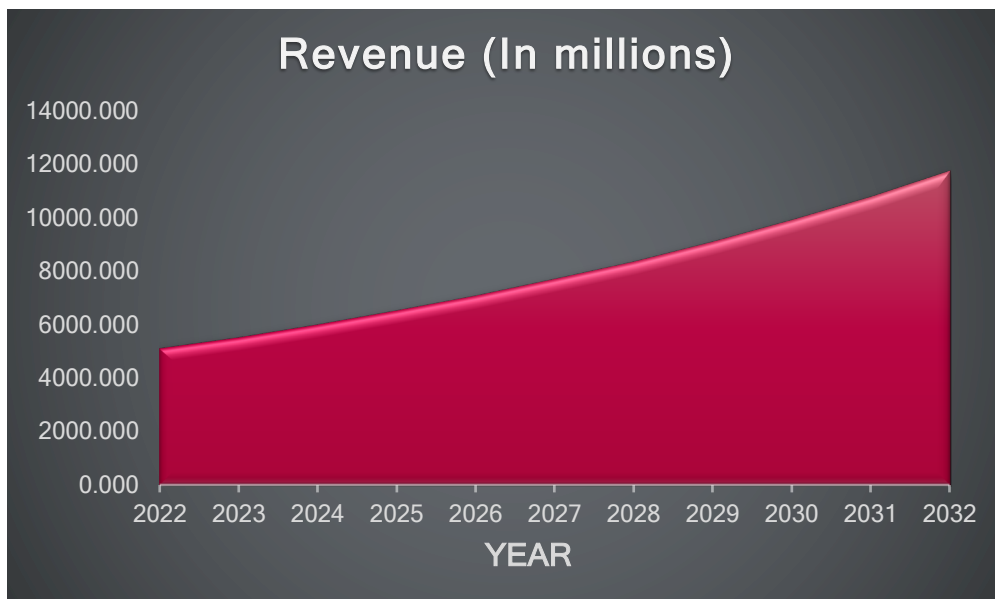|	
Growth Rate of US & Russian participants without Alternium	**5%**
Growth Rate of US & Russian participants with Alternium	**5%**
No. of US & Russia participants in 2020 (In millions)	**45.00**
No. of US & Russia participants in 2022 (In millions)	**49.61**

Growth Rate of International participants without Alternium	**8%**
Growth Rate of International participants with Alternium	**10%**
No. of International participants in 2020 (In millions)	**30.00**
No. of International participants in 2022 (In millions)	**34.99**

Inflation	**1.50%**
Us Treasury Rate	**2%**

CFAT = Total Revenue – Total Expenditure

Total Revenue

Total Expenditure

AFTER TAX INCREMENTAL CASHFLOWS

After-Tax Incremental Cashflows (In millions)

YEAR	Cashflow
2022	~1000
2023	~2300
2031	~4700
2032	~7100

(Chart: line graph showing After-Tax Incremental Cashflows in millions, Y-axis from 0.000 to 8000.000, X-axis years 2022–2032)
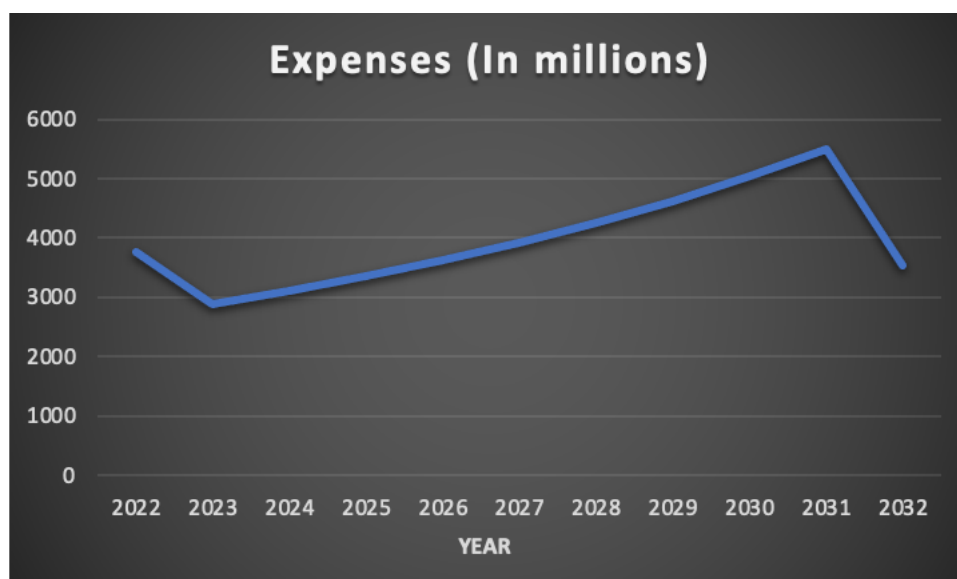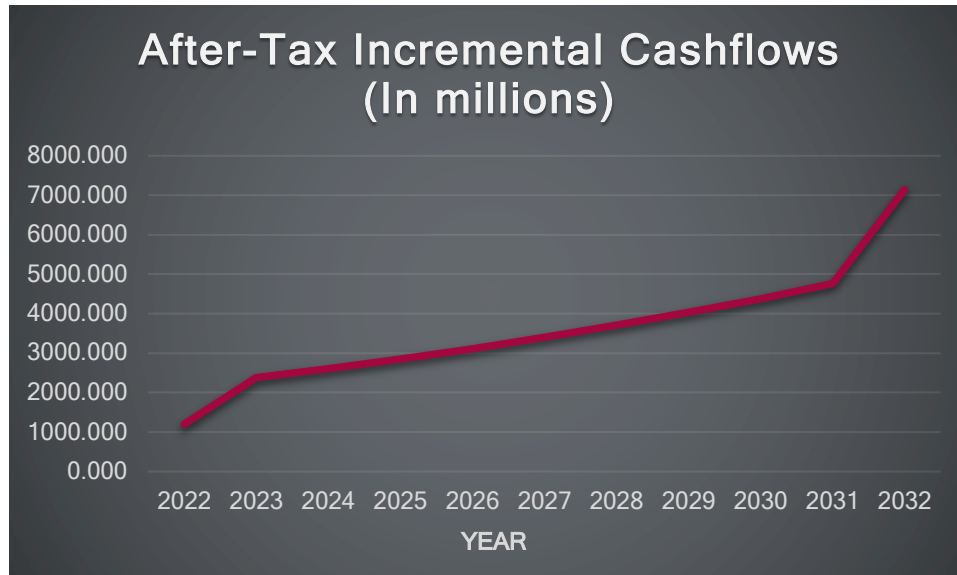
We can see from the above graph that cashflows are increasing year on year. Universal Swaps market cap touched a whopping $8 billion from $1 billion in the years 2022 to 2032.

It also reveals about the increasing interest of cryptocurrencies in the mind of the public

Question - II

Net Present Value

The net present value applies to a series of cash flows occurring at different times. The present value of a cash flow depends on the interval of time between now and the cash flow. It also depends on the discount rate. NPV accounts for the time value of money.

Year	Time	After-Tax Incremental Cashflows (In millions)	Discounting factor	Present Value (In Millions)
2022	0	-3171.499	1	-3171.49854
2023	1	2379.910792	0.900900901	2144.063776
2024	2	2606.577755	0.811622433	2115.55698
2025	3	2850.94335	0.731191381	2084.585206
2026	4	3114.215512	0.658730974	2051.430218
2027	5	3397.652086	0.593451328	2016.341143
2028	6	3702.55566	0.534640836	1979.537454
2029	7	4030.266332	0.481658411	1941.211677
2030	8	4382.151957	0.433926496	1901.531845
2031	9	4759.595351	0.390924771	1860.643725
2032	10	8417.600622	0.352184479	2964.548288

It could be observed from the above that the __Net Present Value__ of our project is __$17887.95177 (Millions).__ Since the NPV is positive , we could conclude that this project is expected to produce more income than what could be gained by earning the discount rate, and the company could go ahead with this project.

IRR – Internal Rate of Return

The internal rate of return (IRR) is a metric used in financial analysis to estimate the profitability of potential investments. IRR is a discount rate that makes the net present value (NPV) of all cash flows equal to zero in a discounted cash flow analysis.

Formula and Calculation for IRR
The formula and calculation used to determine this figure are as follows:

$$NPV = \Sigma t \ C_t / (1+IRR)_t - C_o = 0$$

where:

C_t = Net cash inflow during the period

C_o = Total initial investment costs

IRR = The internal rate of return
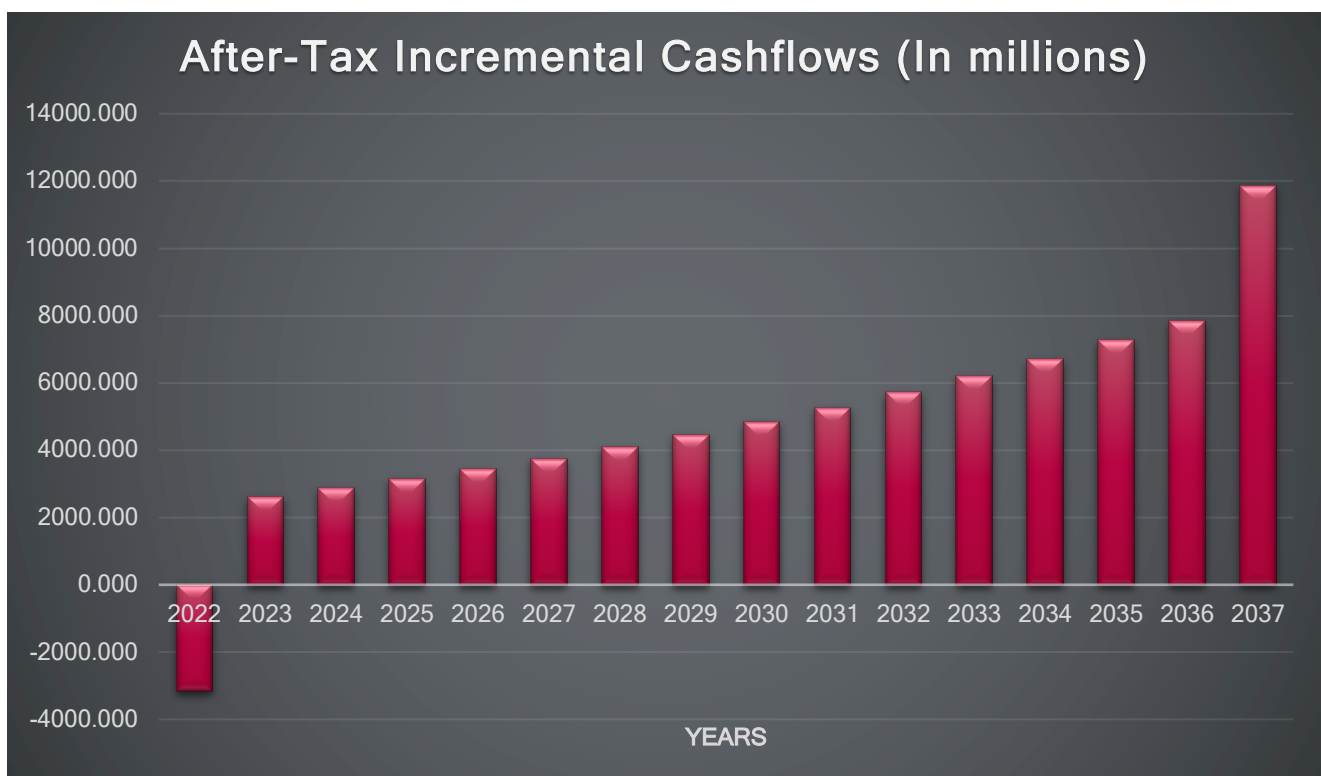
T = The number of time periods

IRR of this project is – 84.146%
It was calculated by putting NPV equal to Zero.

Question - III

We assume that the project is continued for 5 more Years that is from 2022 to 2037.

After - Tax Incremental Cashflows

After-Tax Incremental Cashflows (In millions)

It could be observed from the above graph that the cashflows of the project were tremendous as the years pass, so it has a lot of potential for growth, and I continued the project for another 5 years. It reached its maximum capacity in last 5 years as the cashflows tends to become stable and reached its maximum potential. So, the project was sold at last after 15 years.

<u>NPV of The New Term – $18797.64956(Millions)</u>
<u>IRR of the New Term – 91.675%</u>

THANK YOU