MORPH Bioinformatics

Codon Usage Optimizer

Outline

- Product and Business Idea

- Management Team

- Market and Competition

- Marketing and Sales

- Form of Entity

- Financial Planning

- Risk Evaluation

Product & Business Idea

CUO's unique selling point is its open source platform and its customizability

WHAT IT IS

CUO (codon usage optimizer) is a GUI-based (Graphical User Interface) multiplatform open source software written in Java

WHAT IT DOES

Optimizes genes to be transformed into the *Chlamydomonas reinhardtii* chloroplast genome on an electronic drawing board*

WHO ITS FOR

Researchers who are looking to optimize codons

Codon optimization is used by researchers who are looking for better expression or to eliminate all potential unwanted recognition site

<insert industry analysis>

- 5 Forces industry analysis will be inserted

CUO's provide key features that set it apart from non-customizable software

Usability **+** Flexibility **+** Performance **=** Customizable User-friendly Reliable

Because CUO uses an open-source platform, it can be customized to suit ones codon optimization needs

CUO's overall value proposition is higher than most of its key competitors
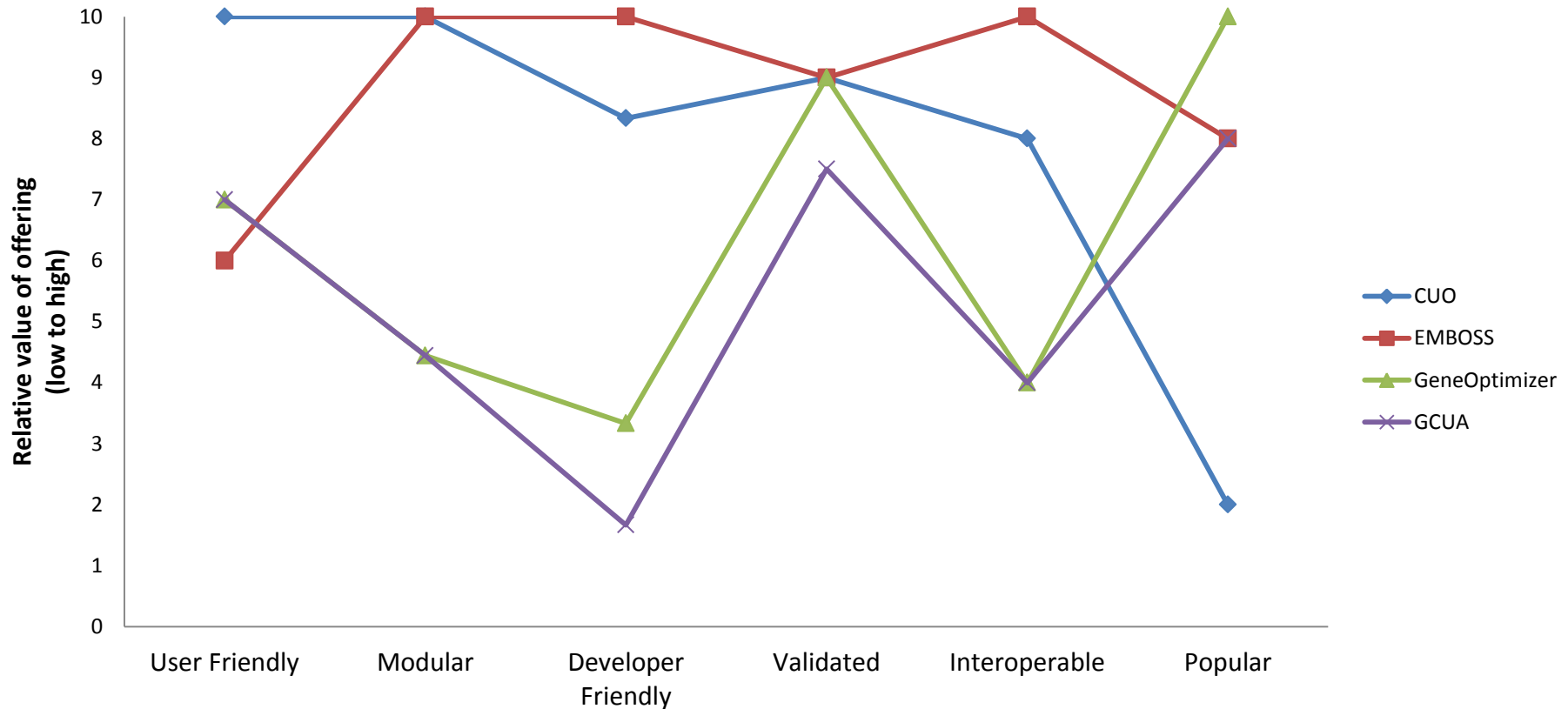
CUO ranks high on value on user friendliness, its modular functionality, validity, and interoperability for its customers.

Management Team & Advisory Board

The team consists of science, engineering, tech, and business experienced individuals

Chairman & Chief Technology Officer : Kong Khai Jien

Chief Executive Officer : Freedanz Ferdinandz

Chief Strategic Officer : Alfred Ho

Chief Financial Officer : Anastasia Suprun

Chief Operations Officer : Aakanksha Khandelwal

Chief Marketing Officer : Li Meng

Chief Scientific Officer : Kheng Ng

Chief Communication Officer : BinMohamadSobri

Market & Competition

The Competition

- The industry is highly fragmented
- <figure out how to capture all competition data from the business plan into one or two slides>

CUO will initially focus on two of the four customer segments

- Customers looking for a cheap option and are not as focused on performance

- Customers who want something that is fast and easy to use and can get customer support when they want it

Economic option

Ease of use & customer support

Flexibility & customization

Validation & reliability

- Customers looking for performance through a software's flexibility. They are often users with an in-depth knowledge of the function and expect high quality performance.

- Customers who are looking for high performance and quality and reliable results; are often ones who are looking to publish results based on data

<results of initial market research>

- Who has the market research?

Marketing & Sales

Market Entry

Generate widespread adoption of CUO by focusing on customers who want flexibility and customizability

Increasing revenue from existing user base by renewing existing subscriptions and thereby converting free users to paying subscribers

Increasing revenue by providing additional consulting and other targeting services to existing customers

Increasing revenue from channel partner and other strategic relationships

Marketing Strategy

- Marketing efforts:

  - Multi-channel marketing online
  - Search engine optimization (organic search)
  - Search engine marketing (pay for search)

- Other things:

  - Providing services to CRO's
  - Reaching out to labs and word of mouth marketing

- Eventually at a later stage….

  - Booth at relevant conferences
  - Publish a paper with the technology and validation

Form of Entity

Limited Liability Company

Financial Planning

Cash Flow Assumptions

Quarter	1	2
COG	20000	20000
Royalty amount to UCL (10%)	0	12650
Development	1000	3500
Outsourced Technologies	3000	4000
Sales & Mkting	2000	10000
Employment	20000	24537,5
Admin/General	60000	10000
Total Operating costs	86000	64687,5

Turnover Breakdown

- software support
- development support
- consultancy
- laboratory validation
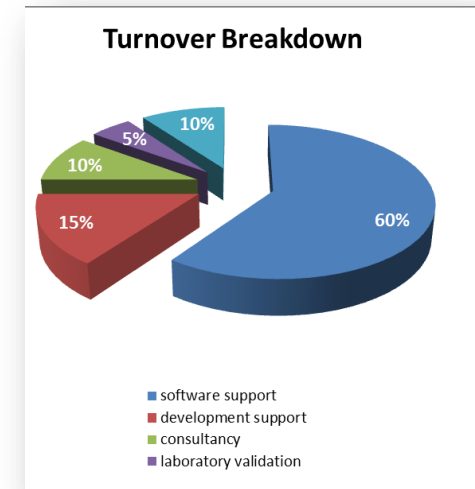
Type of service	Cases sold	Price per unit	Turnover
Software Support	300	520	156,000
Developmental Support	5	8000	40,000
Consultancy and Investigation service	20	1300	26,000
Laboratory validation service	10	1300	13,000
TOTAL	335		235,000

Profit vs. Quarter
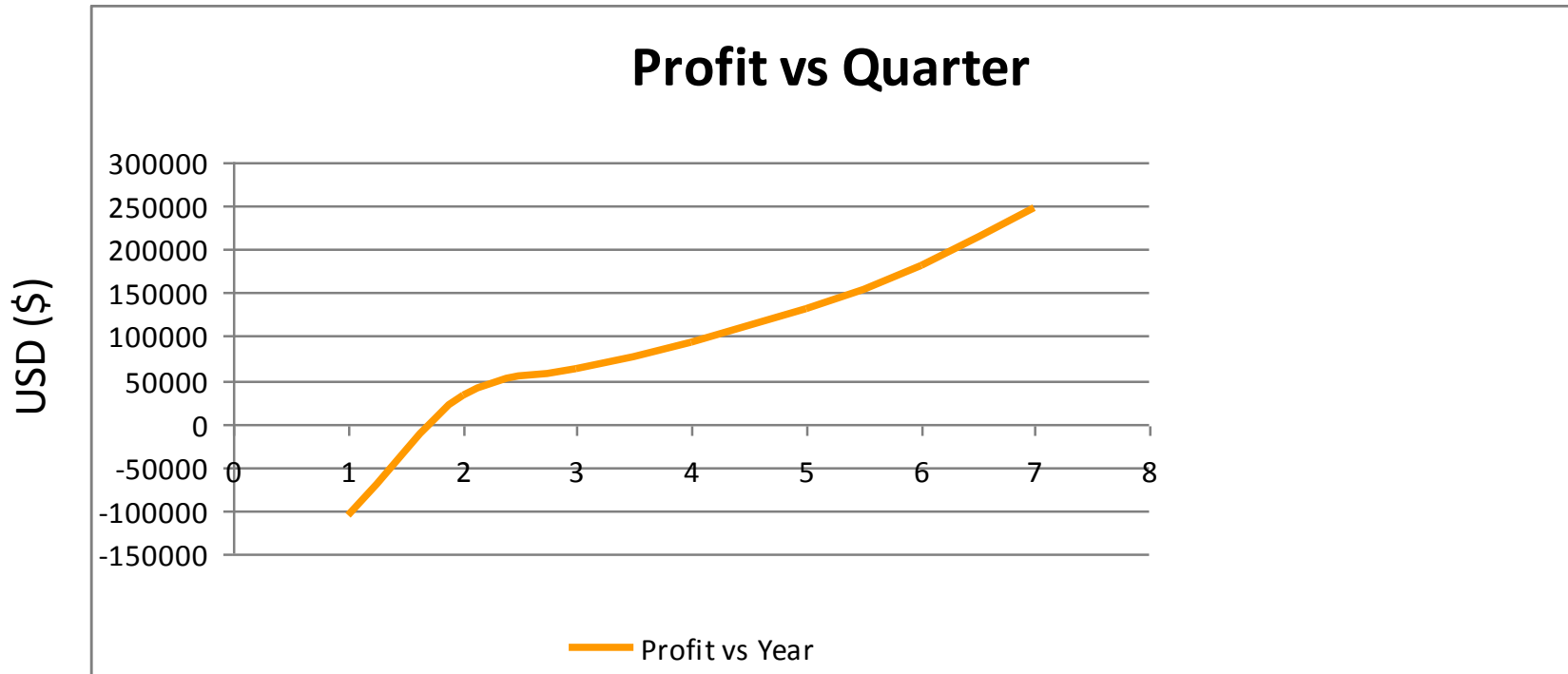
Breakeven
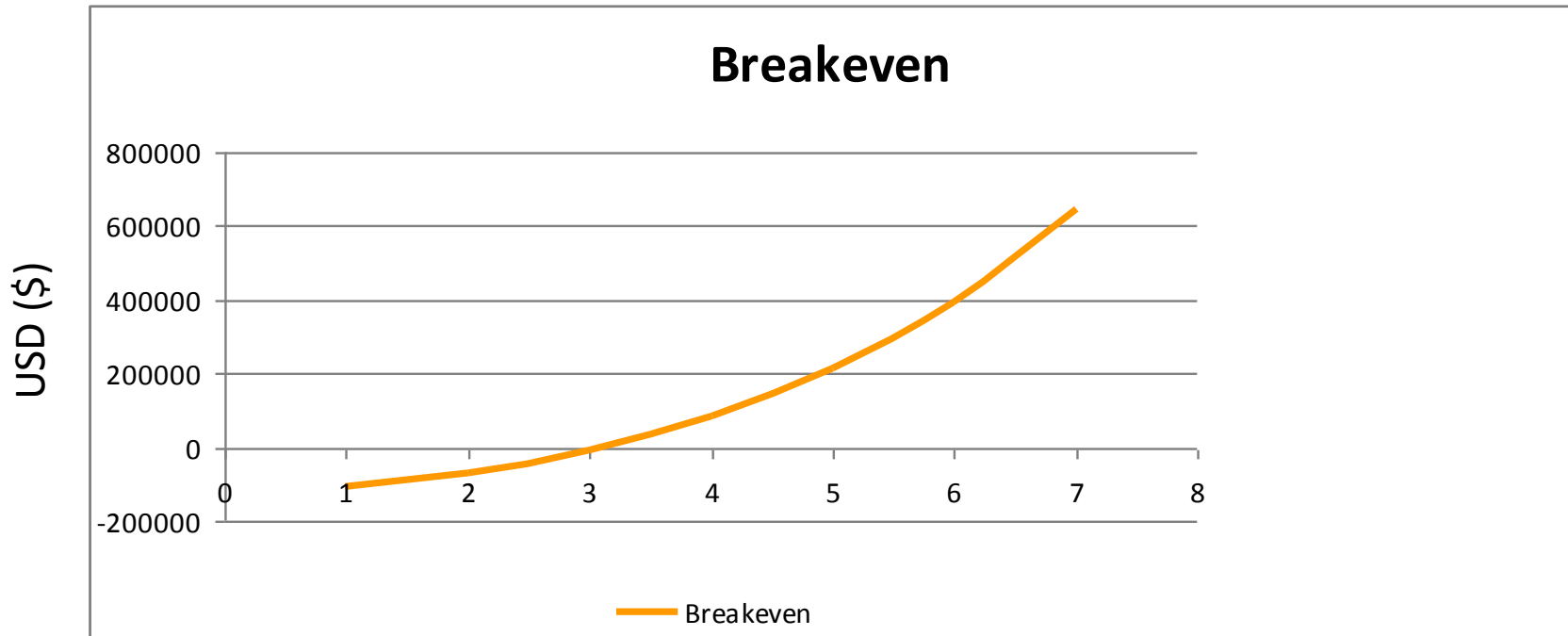
NPV and IRR Analysis

- Future cost and revenue development is modeled depending on units sold and for the next seven quarters giving a reasonable time frame for assumptions and quick adjustments.

Quarter	1	2	3	4	5	6	7
Cash flow	-106000	33450	62698	94112	130262	180334	247798
Cumulative profit	-106000	-72550	-9852	84260	214522	394856	642654
Discount Factor	9,9879E-01	9,9759E-01	9,9638E-01	9,9518E-01	9,9398E-01	9,9278E-01	9,9158E-01
Present Value	-1,0587E+05	33369,319	62471,296	93658,552	129477,943	179032,252	245712,394
Net Present Value	-1,0587E+05	-72502,768	-10031,472	83627,080	213105,023	392137,274	637849,669

- The NPV was calculated by discounting the expected cash flows with a company-wide WACC based on equity and debt betas as well as a target debt-to-asset ratio of 0.7. Therefore debt funding amounts to 74,200 GBP. **The NPV is clearly positive from the fourth quarter on.**

- **The IRR is 66.39%.**

Risk Evaluation

Risk Scenario Analysis

- The (non-diversifiable) market risk is already captured by the use of debt and equity betas in the calculation of the discount rate WACC.

- Although a worse outcome of business operations from e.g. less sales is a diversifiable risk (investor view) it is nevertheless regarded as it is an important fact to be aware of from the entrepreneur view

- Scenario analysis:
    - Best case scenario (BC): sales are 25% higher than assumed
      Probability: 0.2
    - Normal case scenario (NC): sales are as assumed
      Probability: 0.5
    - Worst case scenario (WC): sales are 25% lowar than assumed
      Probability: 0.2
    - Disaster scenario (DC): no sales leading to 0 cash flow
      Probability: 0.1

Risks
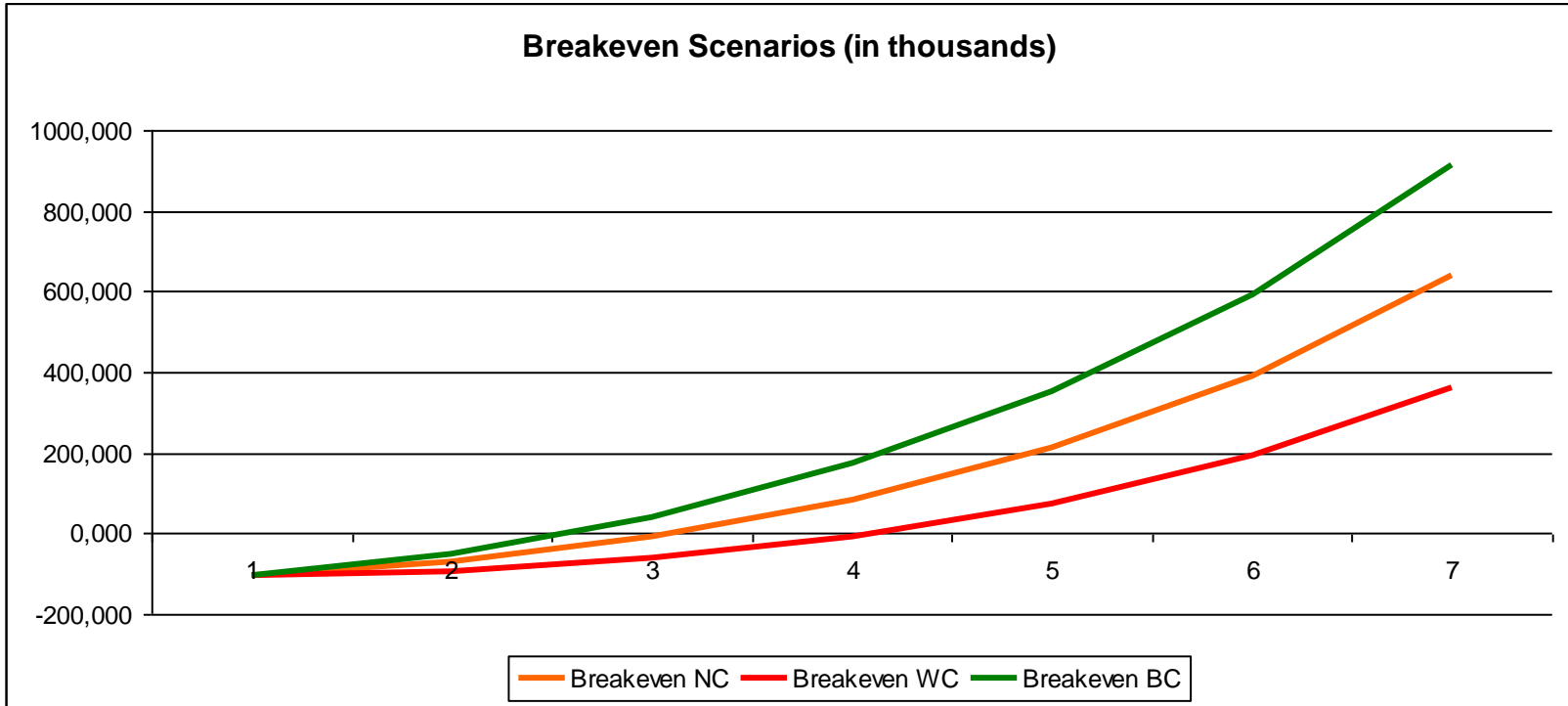
SWOT analysis

- <insert SWOT analysis>

Contingencies

- Work still in progress

Exit strategies

- Yet to be determined

MORPH Bioinformatics
<insert CUO website>