JOB MATCHING AUTONOMOUS

GROUP 13
SUPERVISED BY
1. TS DR AHMAD IZUDDIN ZAINAL ABIDIN
2. AP DR PDD DOMINIC

JoBrox Development Corporation Sdn. Bhd

MEET THE TEAM

ORGANIZATION CHART

JOBROX
END WITH A JOB

MUHAMAD FAIZ IBRAHIM
CHIEF EXECUTIVE OFFICER
(CEO)

KISHEN SIVAKUMAR
CHIEF TECHNICAL OFFICER
(CTO)

NURUL AZREEN BT MOHD SAZALI
CHIEF MARKETING OFFICER
(CMO)

FATYN NURRAIHANAH BT SEMAN
CHIEF FINANCIAL OFFICER
(CFO)

JoBrox Development Corporation Sdn. Bhd

TODAY'S DISCUSSION 🔍

01. COMPANY BACKGROUND _____

02. PRODUCT & TECHNOLOGY DEVELOPMENT _____

03. MARKETING STRATEGY _____

04. FINANCIAL STRATEGY _____

05. FUTURE PLAN _____

JoBrox Development Corporation Sdn. Bhd
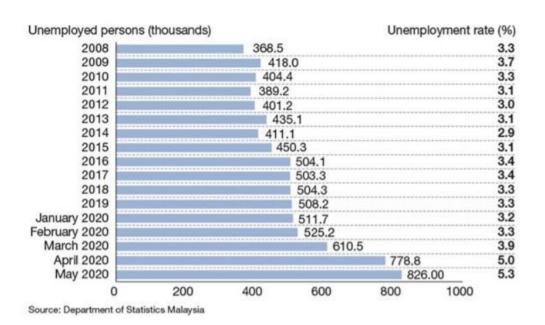
COMPANY BACKGROUND

- AI WEBSITE APPLICATION USED FOR FASTLY AND AUTOMATICALLY SHORTLISTING RESUMES SAVING A LOT OF TIME AND MANPOWER.

- JOBROX, USED FOR SCREENING AND SHORTLISTING RESUMES AND CANDIDATURES

JOBROX'S USP

UNIQUE SELLING PROPOSITION

"END WITH A JOB."

IN ASSURING EVERY INDIVIDUAL WILL EXIT WITH JOB, JOBROX WILL HELP EMPLOYERS AND POTENTIAL CANDIDATES IN JOB SEEKING AREA WITH THE HELP OF ARTIFICIAL INTELLIGENCE.
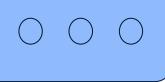
PROBLEM STATEMENT

Unemployed persons (thousands) | Unemployment rate (%)

Year	Unemployed persons (thousands)	Unemployment rate (%)
2008	368.5	3.3
2009	418.0	3.7
2010	404.4	3.3
2011	389.2	3.1
2012	401.2	3.0
2013	435.1	3.1
2014	411.1	2.9
2015	450.3	3.1
2016	504.1	3.4
2017	503.3	3.4
2018	504.3	3.3
2019	508.2	3.3
January 2020	511.7	3.2
February 2020	525.2	3.3
March 2020	610.5	3.9
April 2020	778.8	5.0
May 2020	826.00	5.3

Source: Department of Statistics Malaysia

- Unemployment rate within the fresh graduates keep on increasing year by year. Pandemic has been striking since the earlier COVID19 pandemic, which has had a significant effect on many facets of our lives.

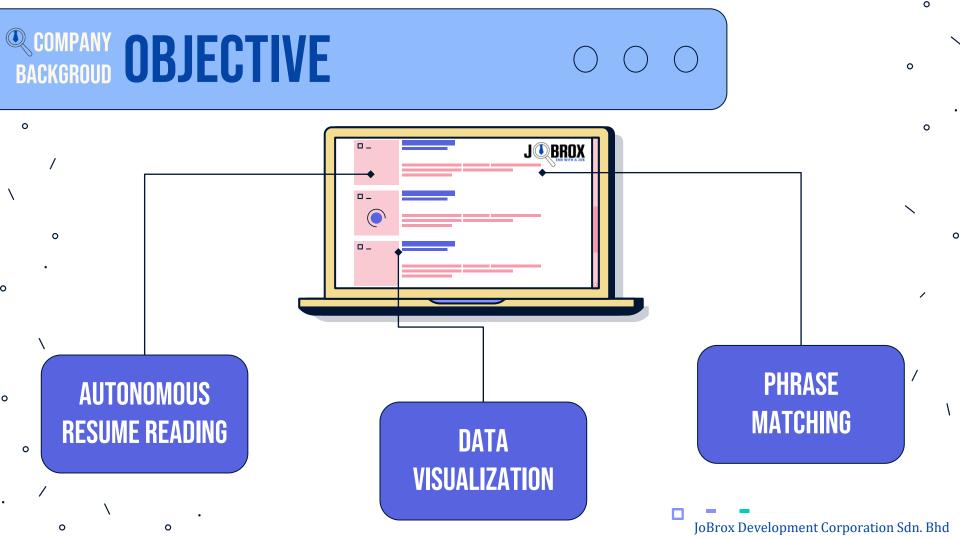- Current Job Seeking platform ,have limitation in Intelligence function

WE ARE NUMBER ONE JOB MATCHING IN MALAYSIA

MISSION

TO ACCELERATE THE NATION TOWARDS AI TECHNOLOGY BY CONTRIBUTING TO THE COMMUNITY IN JOB OPPORTUNITY PLATFORMS.

TO CONNECT EACH PERSON AND THEIR SKILLS IN TERM OF THEIR CAREER TO BE MORE PRODUCTIVE AND SUCCESSFUL IN MALAYSIA

OBJECTIVE

AUTONOMOUS RESUME READING

DATA VISUALIZATION

PHRASE MATCHING

JOBROX
END WITH A JOB

BENEFITS OF JOBROX

ENABLE TO ASSIST UNEMPLOYED GRADUATES IN SEEK FOR JOB

HELP IN MINIMIZE HUMAN RESOURCES WORKLOAD IN JOB RECRUITING

MAXIMIZE USE OF TECHNOLOGY WITHIN SOCIETY IN MALAYSIA

BUSINESS MODEL CANVAS

KEY PARTNERS

- Recruitment Consultant
- HR's company team

KEY ACTIVITIES

- Developing Job hiring platform by utilizing AI
- Marketing and customer acquisition
- Improving job hiring platform quality
- Customer support

KEY RESOURCES

- Development team and testing team
- Salesforce
- Marketing and Sales teams
- Customer Support team
- Content brand
- Budget

VALUE PROPOSITIONS

Job Seekers
- Personalized job seeking platform
- Self-reflection
- Fast response
- Efficient job placement

Job Recruiters
- Saving time finding most suitable employee for the organization
- Reduce labor cost

CUSTOMER RELATIONSHIPS

- User-friendly platform
- Service 24/7,365 days
- Software update

CHANNELS

- Social Media Advertising
- Career Talk with University Students
- Collaboration with Digital Media/Team

CUSTOMER SEGMENTS

- Job Seekers
- Job Recruiters

COST STRUCTURE

- Software Development
- ICT
- People
- Marketing & Servicing

REVENUE STREAMS

- Registration fee – RM25/month (charged till they occupied job)
- For every recruit organization must pay RM200 per person

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TARGET MARKET

GEOGRAPHICS

MALAYSIA (WEST & EAST MALAYSIA

LOCATION WHEREBY INTERNET CONNECTION ACCESSIBLE

PSYCHOGRAPHICS

PERSONALITY

ATTITUDES

INTERESTS

LIFESTYLES

DEMOGRAPHICS

GRADUATES CANDIDATES

HUMAN RESOURCE MANAGEMENT (HRM) ORGANIZATION'S TEAM
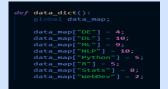
PRODUCT & TECHNOLOGY DEVELOPMENT

HOW DO WE DEVELOP JOBROX?

Welcome to JoBrox!

AI application used for fastly and automatically shortlisting resumes saving a lot of time and manpower.

Learn More   Get Started

SCREENING & SHORTLISTING RESUME

HOW?

NATURAL LANGUAGE PROCESSING (NLP)

NATURAL LANGUAGE PROCESSING

SKILL CATEGORIES / KEYWORD DICTIONARY

HEURISTICS SCORE ANALYSIS

```
def data_dict():
    global data_map;

    data_map["DE"] = 4;
    data_map["DL"] = 10;
    data_map["ML"] = 9;
    data_map["NLP"] = 10;
    data_map["Python"] = 5;
    data_map["R"] = 5;
    data_map["Stats"] = 8;
    data_map["WebDev"] = 2;
```

JOBROX DEVELOPMENT

HOW DOES IT WORK?
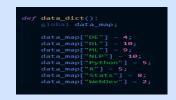

KEY COMPONENT OF NLP PIPELINE:
- MORPHOLOGICAL ANALYZER –WORD SEGMENTATION
- SEMANTIC ANALYSIS-LOGIC
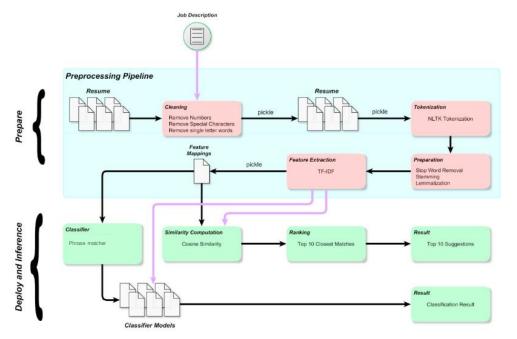- DISCOURSE ANALYSIS -MEANING
- PARSER-GRAMMAR

```
def data_dict():
    global data_map;

    data_map["DE"] – 4;
    data_map["DL"] – 10;
    data_map["ML"] – 9;
    data_map["NLP"] – 10;
    data_map["Python"] – 5;
    data_map["R"] – 5;
    data_map["Stats"] – 8;
    data_map["WebDev"] – 2;
```

SCORING BASED HEURISTICS
- DIFFERENT POINTS CORRESPONDING TO THE DIFFERENT CATEGORIES OF SKILLS (IN ACCORDANCE WITH HIRING CATEGORY)

- TOP 10% OF RESUMES WITH HIGHEST SCORES ARE SHORTLISTED FOR FURTHER PROCESS.

HEURISTIC CALCULATION
- CONSIDER A PERSON'S NO. OF SKILLS IN VARIOUS CATEGORIES AS A1, A2, .. , WHERE A_i REPRESENT NUMBER OF SKILLS A PERSON HAVE

- LET X1, X2, ..., AS MULTIPLIER OR POINTS FOR CORRESPONDING CATEGORIES.

- SCORE IS CALCULATED AS :
SCORE = $\sum A_i * X_i \qquad \forall \ 0 \leq I \leq N$

THE RESUMES ARE THEN SORTED IN DESCENDING ORDER AND THE TOP 10% OF THE RESUMES ARE SELECTED FOR FURTHER INTERVIEW/TEST PROCESS.
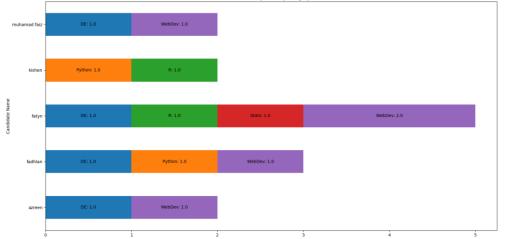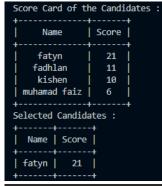
RESULTS & PERFORMANCE

- The program took roughly 13.7 seconds to screen a total of 5 resumes and filtered out the desired candidates eligible for the job.

- Automated parsing helped to increase the recruitment productivity and eliminated human biases.

Resume keywords by category


```
Score Card of the Candidates :
+--------------+-------+
|     Name     | Score |
+--------------+-------+
|    fatyn     |   21  |
|   fadhlan    |   11  |
|   kishen     |   10  |
| muhamad faiz |   6   |
+--------------+-------+

Selected Candidates :
+-------+-------+
| Name  | Score |
+-------+-------+
| fatyn |   21  |
+-------+-------+
```

```
Time taken to process the resumes is  13.797085762023926 seconds -
```

MARKETING STRATEGY

INBOUND

Social Media Advertising

FREEBIE

Free for the first month of usage

OUTBOUND

Collaboration with local university & digital marketing

BUSINESS STRATEGY

FOCUSING ON APPROPRIATE UTILIZATION.
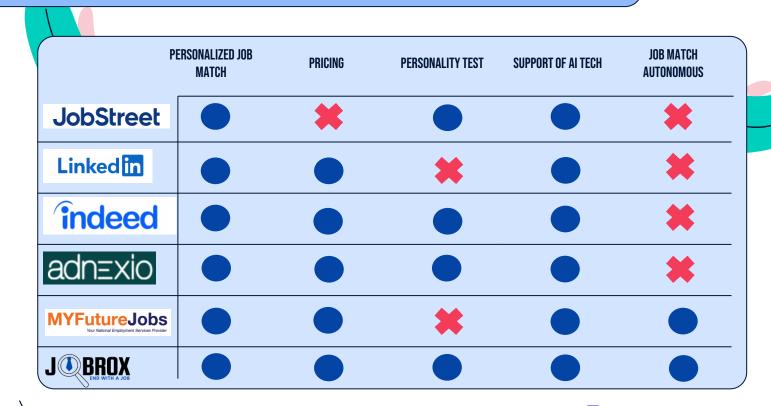**INCREASE MORE REVENUE FOR THE NEXT 3 YEARS IN BUSINESS**

DEVELOP SMART PARTNERSHIP WITH TECHNOLOGY COMPANIES
INVEST CONSISTENTLY IN POTENTIAL EXPERTS

PROVIDE THE BEST SERVICES
ANALYSE MARKET COMPETITOR FOR BETTER IMPROVEMENTS
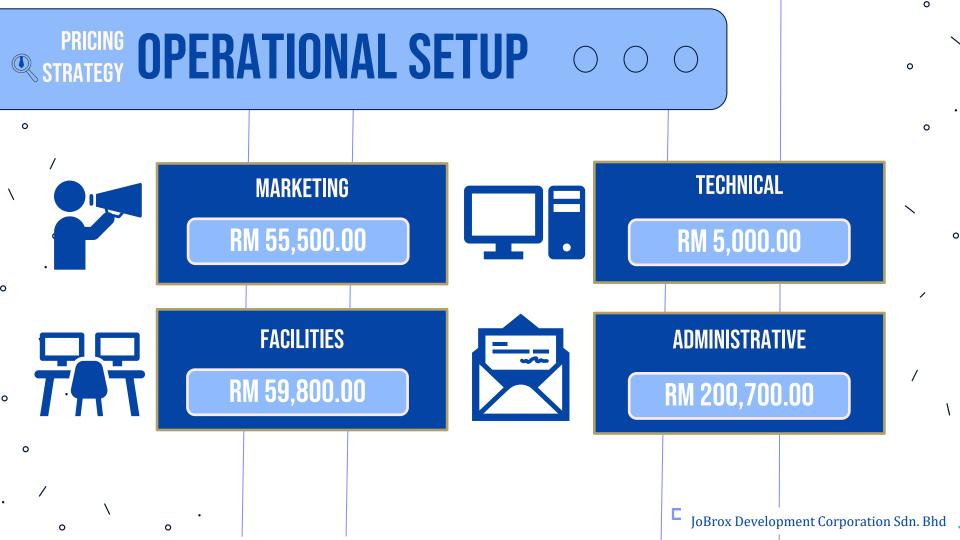
COMPETITOR ANALYSIS

	PERSONALIZED JOB MATCH	PRICING	PERSONALITY TEST	SUPPORT OF AI TECH	JOB MATCH AUTONOMOUS
JobStreet	●	✖	●	●	✖
LinkedIn	●	●	✖	●	✖
indeed	●	●	●	●	✖
adnexio	●	●	●	●	✖
MYFutureJobs	●	●	✖	●	●
JOBROX	●	●	●	●	●

PRICING STRATEGY

AN OVERVIEW OF FINANCIAL MANAGEMENT FOR JOBROX IN TERMS OF PRICING AND INCOME

INCOME STRATEGY

PRICING STRATEGY

OWN SAVINGS

NAME	ESTIMATED (RM)
MUHAMMAD FAIZ BIN IBRAHIM	20,000.00
KISHEN SIVAKUMAR	19,000.00
FATYN NURAIHANNAH BINTI SEMAN	19,000.00
NURUL AZREEN BINTI MOHD SAZALI	19,000.00
TOTAL	77,000.00

OTHERS

LOAN MAYBANK	50,000.00
GRANT UTP	250.00
GRANT CRADLE	100,000.00
GRANT MDEC	100,000.00
TOTAL	250,250.00
GRAND TOTAL	327,250.00

JoBrox Development Corporation Sdn. Bhd

OPERATIONAL SETUP

MARKETING
RM 55,500.00

TECHNICAL
RM 5,000.00

FACILITIES
RM 59,800.00

ADMINISTRATIVE
RM 200,700.00
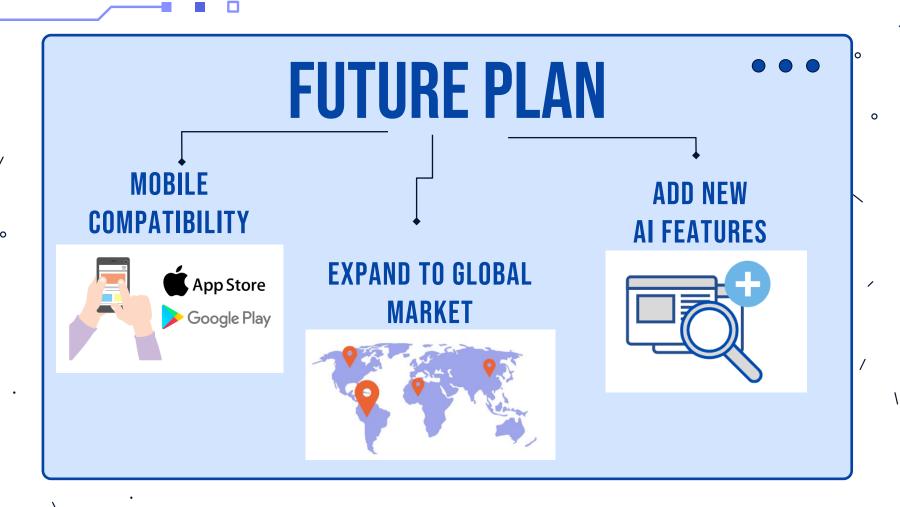
PRICING STRATEGY

ELEMENTS	JOB SEEKERS	JOB RECRUITERS
PAYMENT FEE	RM25/MONTH	RM200/COMPANY
PROMOTION	FREE FIRST MONTH OF USAGE	
END PAYMENT	✓ 10% FROM FIRST MONTH SALARY ONCE OCCUPIED JOB WITHIN A MONTH ✓ 5% FROM FIRST MONTH SALARY ONCE OCCUPIED JOB AFTER A MONTH	NONE

JoBrox Development Corporation Sdn. Bhd

FUTURE PLAN

MOBILE COMPATIBILITY

App Store

Google Play

EXPAND TO GLOBAL MARKET

ADD NEW AI FEATURES

PRODUCT DEMONSTRATION

Q & A

SESSION

THANKYOU

Do reach us out at:

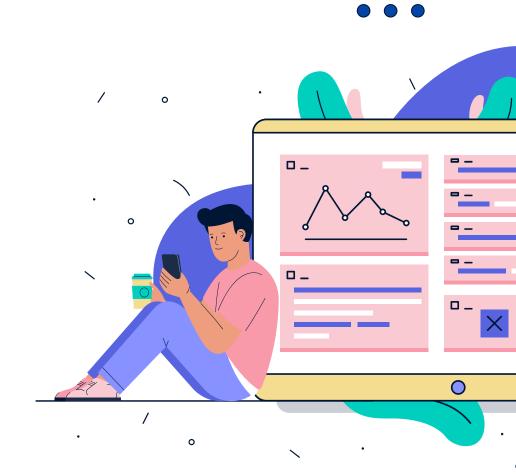**JoBrox Development Corporation Sdn. Bhd. (00005-D)**

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Telephone: +603 0005 5500
Fax: 603 5500 0505
Email: jobrox@work.com.my
URL: www.jobrox.com.my

REFERENCES

COMPETITOR PRICING ANALYSIS

LinkedIn

3. Linkedin

Social media site designed for professional networking and career development.

As an employer, LinkedIn enables you not only to connect with your network and employees. LinkedIn also offers a range of paid recruitment options that come with tools such as prospect tracking, candidate organisation, full network and out-of-network visibility, team collaboration, premium search, including advanced filters and search alerts. The Paid version also includes online classes and workshops, as well as insights on the user profile's views.

A Recruiter Lite account is priced at US$99.95 per month and the Corporate account is priced at US$825 per month. You can check out more recruitment options that best suit your company here.

Website: https://www.linkedin.com/

adnexio

5. adnexio

AI-driven data pool of candidates.

adnexio is an AI-based career platform which uses an online machine recruiter called NEX, that goes through its database of candidates, and suggests between three to seven top candidates who best match the employer requirements. Employers are then able to view the online video interviews and scores of the referred top candidates. Referral fees of between RM10 and RM100 are applied if the employer wishes to further interview a selected candidate, or make an offer for a permanent position. The referral fee unlocks candidates' details such as names and contact information to the employers. Employers can create accounts and post unlimited job listings without any charges, but an employer account should be managed by an authorised recruiter, and will require the company's permission. Read more about NEX, here.

Website: https://adnexio.jobs/

MYFutureJobs — Your National Employment Services Provider

Here's a list of job portals active in Malaysia that you can consider to use to find the talent you need:

1. MYFuture Jobs

Up to RM1,000 worth of incentives available under The Hiring Incentive Programme (PenjanaKerjaya).

The Social Security Organisation (SOCSO) of the Ministry of Human Resources, Malaysia has developed a job matching portal using AI technology to automatically shortlist the best candidates for a job application. Under The Hiring Incentive Programme (PenjanaKerjaya), set up to help promote job creation, employers are eligible to receive up to RM1,000 for hiring each employee via the job matching platform. Employers may also choose from a list of approved training courses and programmes, implemented in collaboration with the Human Resources Development Fund (HRDF), for their new recruits via the programme. As of 1st January 2021, employers who wish to hire foreign workers including expatriates through the programme will be required to advertise their vacancies on this platform.

Website: https://www.myfuturejobs.gov.my/

JobStreet

6. JobStreet

One of the oldest jobsearch platforms, updated with latest technology.

Founded 23 years ago in 1997, JobStreet is well-known in Malaysia. Today, it provides several solutions including Job Ads, Talent Search, Recruitment Centre, and Employer Branding Service. It also publishes its findings on current trends, ideas on hiring tips as well as case studies. JobStreet now uses AI technology to match talents to employers' requirements as listed in the post. A special Intro Package Promotion priced at RM487.60 is available for all first-time users. The package features 30-day job post visibility on the platform, job alerts sent to candidates, three key selling points, as well as branding features to showcase employer brand. For companies that are aggressively expanding, one option is to consider the Recruitment Centre solution which includes end-to-end solutions from screening and filtering, user management across departments, as well as interview scheduling and invitations.

Website: https://www.jobstreet.com.my/en/cms/employer/

indeed

7. Indeed

Post a job for free within 5 minutes.

Launched in 2004 in America, Indeed is now operating worldwide. As an employer, you can post a job for free on the website, with an option to advertise your post at a price point that best suits your budget. Indeed utilises a flexible pay-for-performance pricing model, i.e. no contracts or long-term commitments, and you only pay per click. Free job postings will place your posting in general search results, with access to free candidate management tools. As a free user, you can also accept mobile applications subject to a usage limit. Other solutions include advertising job posts, which typically receive 5 times more clicks; mobile recruiting options, which generate higher user traffic; advertising your brand as featured employer; and ready-to-go candidate assessments.

Website: https://malaysia.indeed.com/employers

SOURCE: HTTPS://QUADRANTBIZ.CO/BLOG/TOP-JOB-PORTALS-IN-MALAYSIA/

REFERENCES

Year	Graduates
2016	4320000
2017	4610000
2018	4960000
2019	5290000
2020	4250000
Average	4686000

Case	Salary (RM)	10% (placement first free month)	5% (placement after first free month)
Minimum salary	1500	150	75
Average salary	2750	275	137.5
Maximum salary	4000	400	200

REFERENCES

MARKETING

Marketing Cost	Estimated Per Month (RM)	No of Months	Estimated Per Year (RM)
Inbound			
Influencers	1,000.00	12	12,000.00
Social media advertisement	800.00	12	9,600.00
Social media targetting	150.00	12	1,800.00
Appstore Optimization (ASO)	170.00	12	2,040.00
Email advertising	228.00	12	2,736.00
Outbound			
Print media	500.00	12	6,000.00
Radio advertising	400.00	12	4,800.00
Event marketing advertising	1,200.00	12	14,400.00
Total Marketing Cost	4,448.00	12	53,376.00
Budget			55,500.00
Surplus/(Deficit)			2,124.00

FACILITIES

Facilities Cost	Estimated Per Month (RM)	No of Months	Estimated Per Year (RM)
Office Rental	2,000.00	12	24,000.00
Electrical and water	700.00	12	8,400.00
Telephone and Internet	400.00	12	4,800.00
Upkeep of premise	100.00	12	1,200.00
Stationaries	200.00	12	2,400.00
Every four months			
Maintainence of appliances -RM1,200	300.00	12	3,600.00
One-time cost			
Appliances - RM14,000			
Amortised for 12 months	1,166.67	12	14,000.00
Total Facilities Cost	4,866.67	12	58,400.00
Budget			59,800.00
Surplus/(Deficit)			1,400.00

ADMINISTRATIVE

Administrative Cost	Estimated Per Month (RM)	No of Months	Estimated Per Year (RM)
JoBrox Developer Salary			
CEO	3,500.00	12	42,000.00
CTO	3,500.00	12	42,000.00
CMO	3,500.00	12	42,000.00
CFO	3,500.00	12	42,000.00
EPF, Socso, EIS & HRDF (15%)	2,100.00	12	25,200.00
Others			
Medical	500.00	12	6,000.00
JoBrox Development (One-time cost)			
Brand Development	41.67	12	500.00
Application Registration and Development	83.33	12	1,000.00
Total Administrative Cost	16,725.00	12	200,700.00

TECHNICAL

Technical Cost (First year)	Estimated Per Month (RM)	No of Months	Estimated Per Year (RM)
One-time cost			
Software	83.33	12	1,000.00
Monthly cost			
Hostgator	22.00	12	264.00
Hosting Maintenance	300.00	12	3,600.00
Total Technical Cost (First Year)	405.33	12	4,864.00
Budget			5,000.00
Surplus/(Deficit)			136.00

Technical Cost (After first year operation)	Estimated Per Month (RM)	No of Months	Estimated Per Year (RM)
Monthly cost (Hostgator)			
Web Domain	75.00	12	900.00
Web Hosting	40.00	12	480.00
Security (SSL Certificates)	162.00	12	1,944.00
Search Engine Optimization	203.00	12	2,436.00
Hosting Maintenance	300.00	12	3,600.00
Total Technical Cost (After first year operation)	780.00	12	9,360.00
Budget			9,500.00
Surplus/(Deficit)			140.00

REFERENCES

ESTIMATED REVENUE

Revenue	No of Student	Monthly Fee (RM)	No of Months	Estimated Revenue (RM) Per Year
Student (RM 25/month after free first month)				
Case 1 (2th month)	200	25.00	1	5,000.00
Case 2 (3th month)	400	25.00	2	20,000.00
Case 3 (4th month)	500	25.00	3	37,500.00
Case 4 (5th month)	350	25.00	4	35,000.00
Case 5 (6th month)	350	25.00	5	43,750.00
Case 6 (7th month)	400	25.00	6	60,000.00
Case 7 (8th month)	650	25.00	7	113,750.00
Case 8 (9th month)	500	25.00	8	100,000.00
Case 9 (10th month)	400	25.00	9	90,000.00
Case 10 (11th month)	100	25.00	10	25,000.00
Case 11 (12th month)	200	25.00	11	55,000.00
Company				
Recruited (200/person)	4,050	200.00	1	810,000.00
Total	4,050			RM 1,395,000.00

ESTIMATED PROFIT

Expected Profit	RM
Total Revenue	1,395,000.00
Total Cost	317,400.00
Expected Annual Profit (RM)	1,077,600.00
Expected Annual Profit (%)	77%

REFERENCES

PRODUCT DISCLOSURE SHEET

Please read this product disclosure sheet before you decide to take out this Professional Business Loan product. Be sure to also read the general terms and conditions.

Product name : Professional Business Loan
Date : ___/___/_____

1. WHAT IS THIS PRODUCT ABOUT?

This is a working capital financing in the form of Overdraft for Professional firms/companies. The interest rate charged for this product is calculated based on a variable rate basis and the Letter of Guarantee by directors (applicable to Sdn Bhd) will be taken as collateral/ security for the financing.

The financing facility is available under Conventional only.

2. WHAT DO I GET FROM THIS PRODUCT?

▪ Total financing amount	Maximum loan size up to RM 200,000.00 (amount of financing approved is at the sole discretion of the bank)
▪ Effective rate	Current base lending rate (BLR) is at 6.9% per annum
▪ Purpose	For working capital
▪ Other additional benefit	SME First Account, ODP Plus & M2u.biz / M2u

Loan Payback	
Maybank	RM50,000.00
Interest (per annual)	6.90%
Interest charge	RM3,450.00
Total Loan Payback	**RM53,450.00**

MATCHING DATA

```python
def create_profile(file, idx):
    text = pdfextract(file)
    text = str(text)
    text = text.replace("\\n", "")
    text = text.lower()
    # below is the csv where we have all the keywords, you can customize your own
    keyword_dict = pd.read_csv('D:\\Resume_Shortlister_AI-NLP\\Resume_Shortlister\\NLP.csv')
    stats_words = [nlp(text) for text in keyword_dict['Statistics'].dropna(axis=0)]
    NLP_words = [nlp(text) for text in keyword_dict['NLP'].dropna(axis=0)]
    ML_words = [nlp(text) for text in keyword_dict['Machine Learning'].dropna(axis=0)]
    DL_words = [nlp(text) for text in keyword_dict['Deep Learning'].dropna(axis=0)]
    R_words = [nlp(text) for text in keyword_dict['R Language'].dropna(axis=0)]
    python_words = [nlp(text) for text in keyword_dict['Python Language'].dropna(axis=0)]
    Data_Engineering_words = [nlp(text) for text in keyword_dict['Data Engineering'].dropna(axis=0)]
    WebDev_words = [nlp(text) for text in keyword_dict['Web Development'].dropna(axis=0)]

    matcher = PhraseMatcher(nlp.vocab)
    matcher.add('Stats', None, *stats_words)
    matcher.add('NLP', None, *NLP_words)
    matcher.add('ML', None, *ML_words)
    matcher.add('DL', None, *DL_words)
    matcher.add('R', None, *R_words)
    matcher.add('Python', None, *python_words)
    matcher.add('DE', None, *Data_Engineering_words)
    matcher.add('WebDev', None, *WebDev_words)
    doc = nlp(text)
```

HEURISTIC CALCULATION

```python
def data_dict():
    global data_map;


    data_map["DE"] = 4;
    data_map["DL"] = 10;
    data_map["ML"] = 9;
    data_map["NLP"] = 10;
    data_map["Python"] = 5;
    data_map["R"] = 5;
    data_map["Stats"] = 8;
    data_map["WebDev"] = 2;
```

```python
def score_calc():
    global score, final_database2, data_map;
    mm = []
    col = [];
    for i in final_database2.columns:
        col.append(i);

    name = "";
    for i in range(len(final_database2)):
        name = final_database2.iloc[i, 0];
        subsum = 0;
        for j in range(1, len(final_database2.columns)):
            num1 = final_database2.iloc[i, j];
            num2 = data_map.get(col[j]);
            subsum += int(num1) * num2;

        mm.append((name, subsum));

    score = mm;
```

PHRASE MATCHER

```python
# Load English tokenizer, tagger, parser, NER and word vectors
nlp = spacy.load("en_core_web_sm")
from spacy.matcher import PhraseMatcher

# Function to read resumes from the folder one by one
mypath = 'C://Users//faizi//Desktop//RESUMEPP'
onlyfiles = [os.path.join(mypath, f) for f in os.listdir(mypath) if os.path.isfile(os.path.join(mypath, f))]
```