

Smart Bengali Idiomatic Translator Service Using Morphological Marketing Technique

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Smart Bengali Idiomatic Translator Service Using Morphological Marketing Technique

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Abstract. Bengali is one of the most spoken languages, ranked seventh in the world considering the context of the country, Research on Natural Language Translation is very important specially to translate Bengali to English Idioms. Idiom is a phrase or proverb that has a meaning, which is different from the meanings of its individual parts. There are not so many researchers in this field. Particularly the processing of Bengali to English Idiomatic proverb translator is completely over-looked nearly in all translators. Researcher just only focus to develop software algorithm for implementation purpose but not to focus where to use. Marketing technique is one of the important technic that help people to get service or use the product in exact place. The project main goal is to provide a Bengali Idiomatic Proverb service using Marketing technique that people can learn and gathered Idiomatic Knowledge from Electronic Dictionary for communication purposes and also show IT and Business are interrelated. User can get the service from online to send via link, IT store or via post. The propose method has designed Business Model Canvas and to create a marketing plan of BTEIS for describing the current market position of a Business. The proposed research has reviewed several papers and journal, but proverb translation has totally ignored. Morphological marketing technique will improve Idiomatic Software problem and to bring Idiomatic profit. The issue has found from Google Translator, BabelFish, Prompt, Convey This etc. Morpheme is a combination of Noun, Pronoun, Adjective, Preposition and verb. The propose project has used visual studio.net, HTML and CSS.

Keywords: Business Model Canvas; GUID; BIRD using Morpheme, BIPM and Marketing plan

1 Introduction

Bengali people are a cultural society inhabitant to the historic region of Bengali in south Asia that has divided in Bangladesh and India. Bengali Language is extremely hard, demanding and attractive language. Bengali is the main verbal communication spoken language in Bangladesh and second most commonly spoken language in India According to studies Idioms, it should have considered how currently emerging technologies could support other aspect of whole engagement process. Such as

enabling and understanding the proverb to communicate for learning using computer technology. Since the situation of the country Research on Natural Language, translation is very important. Especially the processing of Bengali linguistic are totally ignored almost in all translators. Morphological Analysis will improve Idiomatic Problem that issue has found from Google Translator. The service will display when user will input the Bengali idiomatic proverb that will show the output English proverb by using Morphological analysis. Morten et al. (S. Das gupta, M. Khan, 2011) demonstrated that Morphology helps Arabic Parsing and improved parsing languages (Hrafn Lofts son, 2007) and provide preferred outcome with high correctness. All the current researchers are implementing Bengali to English software and solve with different problem using Morphological analysis, but no one can develop business plan for getting profit after using this software service.

2 Morphological Translator system

Md.Khalillur Rhaman and Narzu Tarannum et al (Rhaman, K. Narzu, and T. 2012) has proposed Bengali to English translator based on Morphological semantic and syntactic analysis. There is a lot of Bengali to English Research paper has published. Here is some of the research paper publication has included in the literature review. The significance of study on Natural Language Translation is not ignorable. Machine translations for several languages like Spanish-English, Japanese-English, French-English, Arabic-English and Malay-English already have successfully done. Bubblefish translator, stimulate translator and even Google translator are the example of their success but Bengali to English Idiom translation still have not done yet. Google translator is also translating Bengali to English word but there is a lot of problem. Bengali language also has verbs, lexicon, nouns, pronoun, adjectives, and adverb and prepositions which is similar with English parts of Speech. Case Analysis is a relationship between a verb and constituent, which is often a noun or pronoun or an adverb, in a sentence has called case structure. On the other side, propositional information is under associative case. Karta corresponds to English subjective case that indicates the subject of a finite verb. Karma indicates the direct object of a verb and Karan is called the means of that deed. This is Bengali construction word-by-word translation but grammatical way of English translation. For an example: I love mom. Here I, is subject/pronoun, love is verb and Mom is object. Bengali translation Ami Makeh Valobashi. Here Ami is subject/pronoun, Makeh (means Mom) is object and valobashi (means Love) is verb. Bengali word by word translation subject, object and verb and English word by word translation Subject verb and object. Morpheme is using in Morphological analysis which is Noun, pronoun, verb and adjective.

2.1 Morphological Analyzer Technique

Priyanka Das and Arjun Das et al(Das, P., & Das, A. 2013) has proposed a Bengali Noun Morphological Analyzer. Bengali Noun Morphological Analyzer implemented at first on the semi-manual created database of 87697 inflected words list tokens. Linguistics Resource creation comprising of Noun, Pronoun, Adjective roots with and

without its suffix. The linguistic knowledge is implemented in developing the finite state grammar which gives way to the development of Bengali Noun Morphological Analyzer.

2.2 Morphological Normalization Technique

Rejeanul Haque, Segio penkale, Jie Jiang, Andy way et al (Haque, R., Penkale, S., Jiang, J., & Way, A. 2012) proposed a Morphological Normalization Technique that has shown Morphological segmentation in SMT with a less explored translation pair for Bengali to English. Bengali Languages are morphologically very rich which result in data sparseness. Morphological normalization techniques are highly inflected Bengali language for translation into English. Morphological suffix separation process significantly reduces the data sparseness problem in the training corpus.

2.3 Morphological Database Technique

Hessa Alawwad, Emdad Khan et al (Alawwad, H. & Emdad, K. 2016) has proposed an Intelligent Database system using Natural Language Processing. Database plays a major role in computer systems. Natural Language directly interact with a database is a nice and user-friendly solution. This type of communication to achieve between the computers and human. Morphological database technique will process the actual input and given the correct output. The query result to will make the attractive output compare to make complex algorithm. For an example, Database has developed in which words were stored with root words that has inserted mostly morpheme.

2.4 Business Model Canvas

The propose project use Morphological Marketing Technique to provide Bengali Idiomatic proverb service. Bengali Proverb service development is based on Morphological Analysis which is Morpheme word like Noun, pronoun verb and Adjective but the software service is generated based on marketing strategy. How the software will use in the market using Morphological Marketing Technique. The Marketing concept is based on Business Model canvas and Marketing plan. The Business Model Canval (De Reuver, Mark, Harry Bouwman, Timber Haaker, 2013) is a strategic management and lean startup template for developing new or documenting existing business models. It is visual chart with elements or product's value proposition. There are nine building blocks in Business Model canvas. The importance of searching for a Business Model, Osterwalder says, Great product are becoming a commodity (A.Osterwalder, Yves Pigneur, Alan Smith, 2011).

2.5 Marketing Plan

A Marketing plan is comprehensive document that outlines a company advertising and marketing efforts. A marketing plan also includes a description of the current marketing position of a business. Target market and marketing mix that a business will use to achieve their marketing goals. Marketing is long-term investment of business. A Marketing plan will help to focus the company on the vital activity of

growing the business that will give a solid return. The marketing plan is the blueprint to opening, building and maintaining a relationship between your companies and important for product or services that how the products or services will sell and get profit. The proposed research has followed the marketing plan base on “Kotler and Keller” et al (Kotler, P., and Keller, K.L. 2015) which has several components. The propose project has following five components. There are Executive Summary, Situational Analysis, Marketing Strategy, Financial Projection and Implementation Control.

3 Methodology

There are five steps for Bengali Idiomatic Software service. The following Fig3. has shown Bengali Idiomatic proverb service chart. Step1 has discussed about Business Model Canvas. The propose development project has applied nine building blocks in Business Model Canvas. There are Key partners, Key activities, key resources, value proposition, Customer Segments, Channels, Customer Relation, cost structure and Revenue. The Project Business Model Canvas is based on Bengali Idiomatic Proverb Service. Step2 has created a Model for Online Bengali Idiomatic Payment Method. Payment Method has discussed about online payment opportunity for users to get the service. Step3 has developed Bengali Idiomatic Service Prototype.

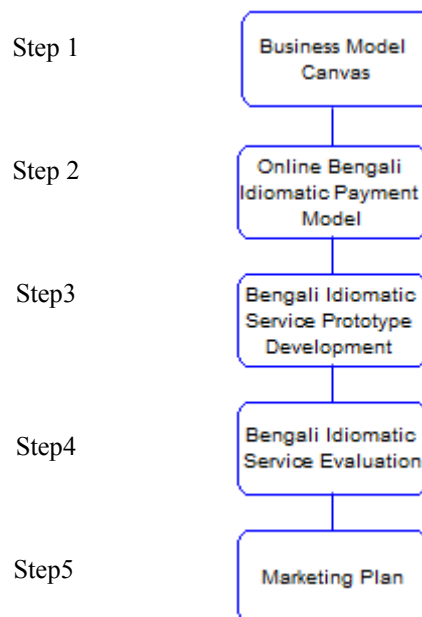


Fig1. Bengali Idiomatic Proverb service chart

The project designs the implementation plan for translator system. User input Bengali Idiomatic proverb then software service will display English Proverb. On the other

hand, user input English proverb then software display Bengali proverbs. Step4 has evaluated Bengali Idiomatic Software Service is based on user survey method and Finally, Step 5 has discussed about Marketing plan to get estimated profit using Bengali Idiomatic Proverb service. Marketing plan consists of five steps which is based on “Kotler and Keller”. There are Executive Summary, Situation Analysis, Marketing Strategy, Financial Analysis and Implementation Control. Executive summary has discussed about short idea about plan. Situation analysis is based on SWOT Analysis. Marketing strategy is based on Market Research. The project has forecasted financial analysis which is based on cost structure and Revenue.

4 Description process for Bengali Idiomatic Software Service

Business Model Canvas

The project has discussed about nine building blocks (Osterwalder, Pigneur & al.2010) of Bengali Idiomatic Software Service.

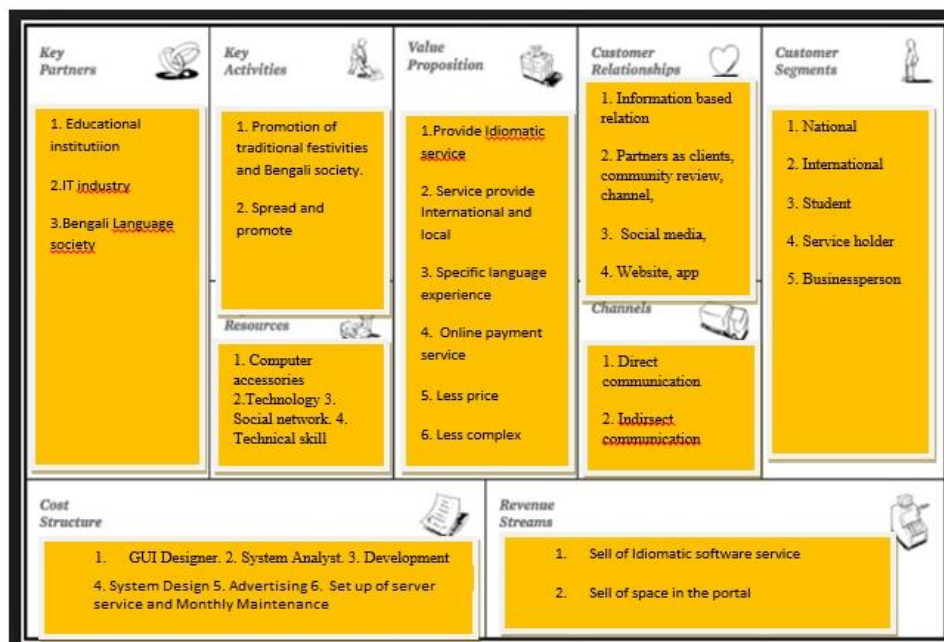


Fig2. Nine building Blocks of Bengali Idiomatic Software Service

Educational Institute, IT industry and Bengali language society is the key partner of this Bengali idiomatic service. There is some promotional activity of traditional festivities for Bengali Society. The activity is to spread and promote the idiomatic expression importance Bengali Community. One the other hand, there is a digital dictionary activity for idiomatic proverb service of user attractiveness. The propose resources are computer accessories, social network, technical skills and to use differet

kind of software tools. The project will provide only Idiomatic software service. International and local Bengali People can access this software. Customer will get specific language experience which is only provide Bengali Idiomatic proverb experience. The price of the software is very less and user friendly. There are National, International Bengali tourists, student, professional, Business person and Researcher is the customer segment of this proposed document. There are direct and indirect communication for this proposed service. Customer relation is based on website, app, social media, community review, channel and to provide information about service to use. There are several cost to implement this service which is system design. Gui design, software requirement analyst, development, advertising and monthly maintenance. The service revenue is to sell Bengali Idiomatic Service and space portal for advertisement. Sell space in the portal is not implemented. The following Fig3 and Fig4 has shown use case and flowchart for Bengali Idiomatic Payment Modle(BIPM) to get proverb experiecee.

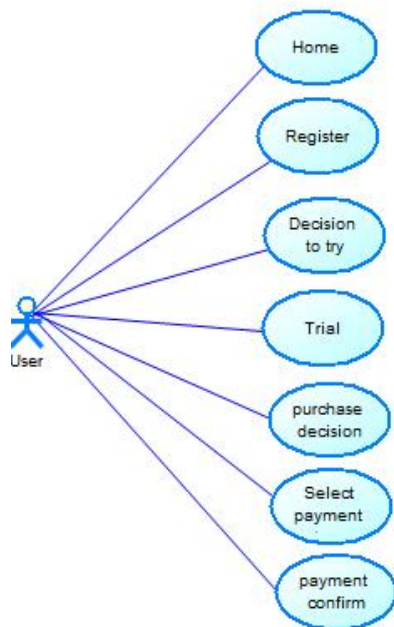


Fig3. Payment Model Use case

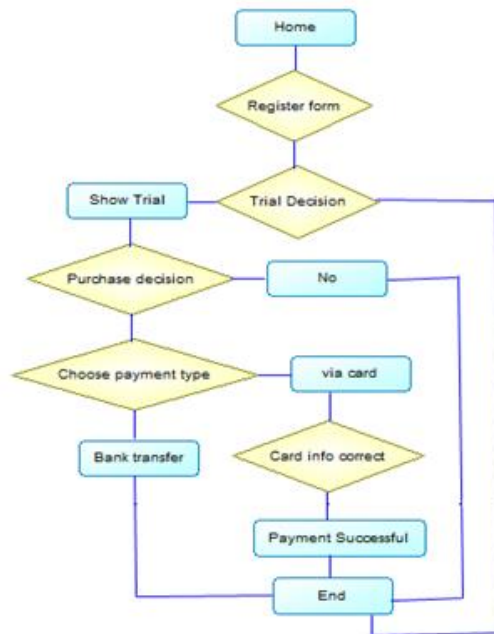


Fig4. Flowchart

User visit the website and register. After successful registration user can take the decision for try. After try, there is an option for purchase or not to purchase. Select payment will display after choosing purchase decision. User can purchase via Bank Transfer or buy the service from credit card. System the above Fig4 has describe flow chart about data flow. There is a condition for every situation. If user register the page successfully then only can go trial decision. Otherwise system is not process. If user choose payment method via credit card and fill the all information correctly then system will show payment successful for delivery via post or send via link.

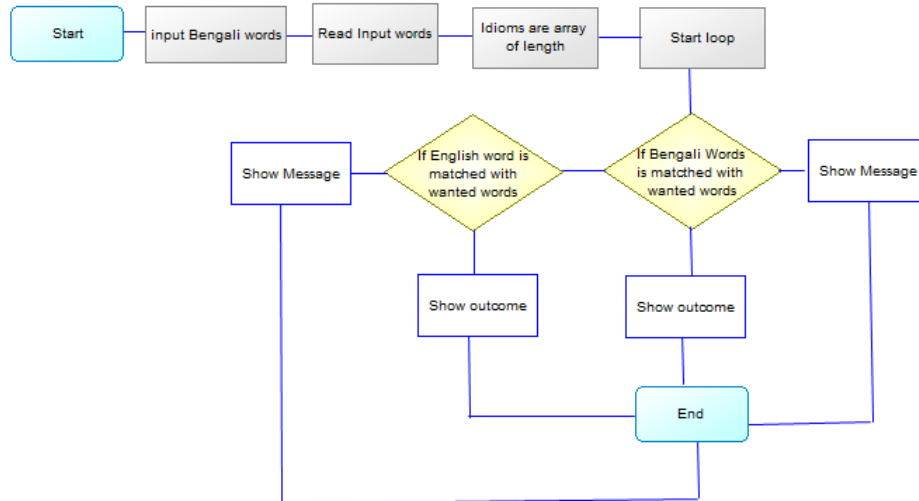


Fig5. Bengali Idiomatic proverb service Flowchart

The above Figure 5 has described about Bengali idiomatic proverb service flowchart to flow the translator process. User chose and select the Bengali proverb Badha Sristi and click show English Idioms then system will display proverb call to the bar or enter English proverb and click the button show English Idiom the service display Bengali proverb which is Bad shoot mean Vul anuman. The following Fig6 has shown the Bengali Idiomatic Software Development for proverb.



Fig6: Proverb Translation

The following Fig7 has shown software usefulness about Idiomatic service. 15 percentage user is not agree with the service because it is not useful. Number of less useful is 21 percent; number of much useful is 27 percent. Finally, there are high number of person has supported about Bengali Idiomatic prover service which is 33 percent. The evaluation process is based on user survey questionnaire.

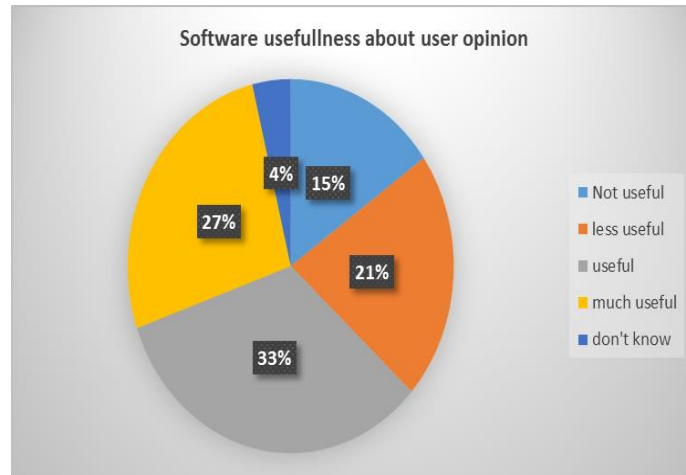


Fig7. Software usefulness from user survey

The project has also shown very good revenue opportunity to share proverb experience with user for good communication purposes. Marketing plan is one of the technique that can help to show estimating profit after using the service. Google Translator, prompt, Lingue and Babel Fish and ConveyThis is the competitor for Bengali Idiomatic Proverb translator. Google translator also translate Idiomatic proverb expressing but many of them has shown incorrect. The propose project has compared with Google to translate only proverb. The following Fig8 has shown proverb comparison between Google Translator with BengaliIdiomaticService. Google has translated Bengali to English proverb in 0.22 and BengaliIdiomaticService has translated 0.45 percentage out of 70 percentages, but still Google translator is a good competitor against BengaliIdiomaticService. One of important reason Google translator provide as a volunteer service and other translator is not provide Bengali to English translator like Bing. The service strengths are to provide useful content to explore and good Idiomatic proverb experience to learn for communication. The service need high number of investment and IT development skills. Bengali language recognized, awarded at international level and one of the top 10 language ranking in the world. Great Bengali language statistics based on number of native speakers. People look more interest to use for communication, learn, read, listen and travel on place to another. High number of free translator portal and apps is the threats for BengaliIdiomaticService that may attracts user (Google translator Bing, etc.). The propose project target market is based on first language speakers and native speakers the target market is depends on population, income, education, age and technology. There is B2B (Business to Business) targeting for Idiomatic proverb service which is IT industries, Educational Institution, Bengali Language society. There are top 11 ranking language out of 20 and Bengali is one of the most demandable position after Portuguese language and Bengali is the number seven ranking bases on population of first language speaker. There are 189 million population of first language speakers (Lewis, M.Paul, Gary F.Simons, and Charles D.Fennig 2016). The propose project has decided to provide proverb service which is based on language popularity. Business to customer targeting is not to focus all first and native language speakers.

The service will focus who has really interested to learn proverb for communication. B2C has focused professional, Researcher, Student, Business person and traveler who has middle class income, education, like technology and age between 11 less or equal to 65. Therefore, user can use the technology to pay the service from online. At the beginning, the service has used penetration strategy. Therefore, the price is low. The forecasted revenue is based on B2B and B2C. The following Table2 and Table2 has shown the B2B and B2C policy and profit forecasting. B2B policy of Base Service provider charges 6.99\$ to per direct or indirect user.

Number of parters	Fee	Months	Number of user	50% of total
5	6.99\$	12	1,000	41,880.00\$
10	6.99\$	12	4,000	1,67,520.00\$
15	6.99\$	12	5,000	209400.00\$
20	6.99\$	12	6,000	2,51,280.00\$
25	6.99\$	12	7,000	2,93,160.00\$

Table1. Basic Subscription of B2B

Online payment subscription					
Number of users assumption	Number of population	Fee	Month	Total	
1500	170 million	6.99\$	12	1,25,820\$	
30,000	170 million	6.99\$	12	25,16400\$	

Table2. Online payment subscription of B2C

The above Table 5.4 and 5.5 has shown the 5-basic subscription of B2B + 1,500 online user subscriptions of B2C as minimum numbers to cover expenses and even get an extra:

$$41,880.00\$ + 1, 25,820\$ = 1, 67,700\$$$

$$1, 67,700\$ - 27,140\$ = 1, 40,560\$ \text{ profit}$$

There is a worst-case estimation for Bengali Idiomatic Software Service. The value would maintain the activity and enough to cover salaries.

5 Conclusions

In this article, the project has briefly discussed about Bengali Idiomatic software service usefulness and importance for communication purposes and forecasting profit for Bengaliidiomaticservice experience for proverb. Morphological marketing technique has used Morphological word that contain the sense information inside it and also bring good Idiomatic profit. Finally, the result has shown the estimated profit even any worse case happen. In the future work the project intend to active

relationship with B2B and B2C because the service is not still activated. The automated messaging system is still not developed for Bengali Idiomatic payment Model (BIPM) after purchase from online and the payment model is not updating when provide discount for special purposes. The service is not activated directly from Android phone. As a result, after purchase from online user will get the service via link or send via post. In this situation, the purchasing rate will decrease compare to expected one.

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