JOURNEY OF MACHINE TRANSLATORS AND GOOGLE TRANSLATOR

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ABSTRACT

The work in the space of machine interpretation has been continuing for most recent couple of many years however the promising interpretation work started in the mid 1990s because of cutting edge research in Artificial Intelligence and Computational Linguistics. India is a multilingual and multicultural country with over 1.25 billion populace and 22 intrinsically perceived dialects which are written in 12 distinct contents. This requires the robotized machine interpretation framework for English to Indian dialects and among Indian dialects in order to trade the data among individuals in their nearby language. Numerous usable machine interpretation frameworks have been created and are being worked on in India and all throughout the planet. The paper centers around various methodologies utilized in the advancement of Machine Translation Systems and furthermore momentarily portrayed a portion of the Machine Translation Systems alongside their highlights, spaces and restrictions.

KEYWORDS : *Machine Translation, Google Translator, Lingvanex*

1. INTRODUCTION

India is a multilingual country where the communicated in language changes after each 50 miles. There are 22 authority dialects and around 2000 tongues are spoken by various networks in India. English and Hindi are utilized for true work in many provinces of India. The state governments in India transcendently complete their authority work in their separate local language though the authority work of Union government is done in English and additionally Hindi. Every one of the authority archives and reports of Union government are distributed in English or Hindi or in both English and Hindi. Numerous papers are additionally distributed in provincial dialects. Deciphering these reports physically is exceptionally tedious and expensive. Consequently there is need to foster great machine interpretation (hereafter alluded as MT) frameworks to address every one of these issues, to set up a superior correspondence among states and Union governments and trade of data among individuals of various states with various provincial dialects.

Numerous scientists, establishments and exploration associations in India have begun dealing with MT frameworks for English to Indian dialects and among Indian dialects have prevailing with regards to acquiring extremely good outcomes. There is a monstrous need to decipher these records in separate state's neighborhood language for appropriate correspondence with commoners of the state. Over 95% of the Indian populace is denied of the advantages of Information Technology because of language boundary [16].

India has asserted a huge get-together in Hindi is the language you talk and in numerous spaces it works in a wide range of official and study. Numerous online interpreter advancements today utilize diverse machine interpretation approach. As every interpretation approaches various qualities, the consequences of the interpretation would be unique. Google Translate and Bing Translator free online machine interpreters is utilizing factual machine interpretation.

In this paper, we discuss about the various online translation systems available on internet and App Store(like Google Translate and Microsoft Bing Translator) for English to Hindi translation and its translation quality. My researches focused on survey of online translation solutions for English to Hindi translation and investigate its translation quality.

This paper is organized into 6 sections. Section 2 gives a brief history of MT system; section 3 gives an idea of the different approaches to build a MT system. Section 4 discusses major sites and apps for transations. Section 5 describes the summary report for translators. Section 6 gives the conclusion.

2. BRIEF HISTORY OFMACHINE TRANSLATORS

Table 1 shows the time line chart of Machine translation

Period		Year	Activity
1948 to 1960	The beginning	1949	Warren Weaver proposed the first idea on the use of computers in translation by adopting the term computer translation.
		1952	The first symposium of MT was held at MIT under leadership of Yehoshua Bar - Hillel.
		1954	The first basic automatic Russian-English translator was developed by a group of researchers from Georgetown University in collaboration with IBM that translated morethan sixty Russian sentences. Victor Yngve published the first journal on MT, entitled Mechanical translation devoted to the translation oflanguages by the aid of machines.
1960 to 1966	Parsing and disillusionment	1961	The computational linguistics was born due to weekly lectures organized by David G. Hays at the Rand Corporationin Los Angeles. First International Conference on MT of Languages and Applied Language Analysis of Teddington was held with the participation of linguists and computer scientists. The scientists involved in the translation work were Paul Garvin, Sydney M. Lamb, Kenneth E.Harper,Charles, Hockett, Martin Kay and Bernard Vauquois.
1960 to 1966	Parsing and disillusionment	1964	Creation of committee ALPAC (Automatic Language Processing Advisory Committee) with American government To study the perspectives and the chances of machine translation.
		1966	ALPAC published its famous rapport in which it concludedthat its work on machine translation was just waste of timeand money. Conclusion of this rapport made a negativeimpact on the MT research for number of years.

1980 to 1990	Japanese invaders	1981	The Japanese firm SHARP developed Automatic translatorDUET (English - Japanese), which was based on rules and transfer approach.
		1983	NEC developed a system based on algorithm called PIVOT named as Honyaku Adaptor II, used for Interlingua approach.
		1986	OKI3 Developed a Japanese -English system PENSEE, whichwas rule based translator. Hitachi developed a translation Japanese - English systemHICATS (Hitachi Computer Aided Translation System).
1990 to 2000	Web & new vague of translators	1993	The project C -STAR (Consortium for Speech TranslationAdvanced Research) was initiated. It was trilingual (English,German & Japanese) MT system for the parole in the field oftourism (dialogue client travel agent)
		1998	Marketing of machine translator REVERSO was done byFortissimo.
2000 to 2010		2000	Japanese Laboratory ATR developed a (Japanese-English & Chinese - English) system ALPH. This system used Examplebased approach of MT.
		2005	The first web site for automatic translation by Google waslaunched
		2007	A hybrid MT METIS -II was developed that used the SMT,EBMT, and RBMT machine translation approaches.
		2008	23% of Internet users used the MT and 40 % consideringdoing so.
		2009	30% the professionals have used the MT and 18% perform aproofreading.
		2010	28% of Internet users used the MT and 50% planned to doso.

1.   MACHINE TRANSLATION APPROACHES

Numerous MT frameworks across the globe have effectively been produced for the most ordinarily utilized regular dialects, for example, English, Russian, Japanese, Chinese, Spanish, Hindi and other Indian dialects and so forth Figure 1 portrays the current machine interpretation frameworks and different methodologies utilized in fostering these frameworks.
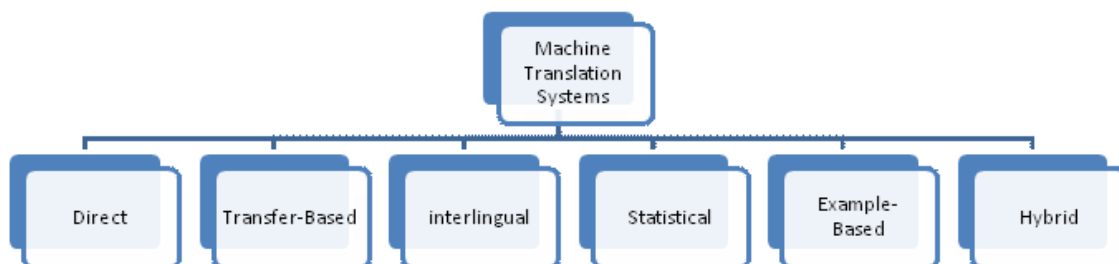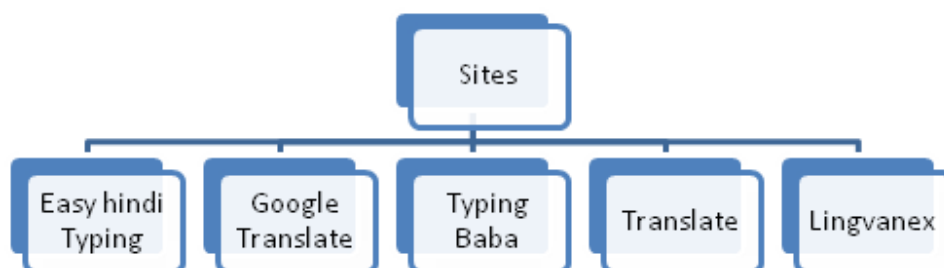
Figure 1. Machine Translation Systems

4. Some popular websites and applications for English to hindi typing

It's said that the first significant translation in the Western World was of the Hebrew Bible in the third century. Jewish people who had forgotten Hebrew needed it to translated into greek, so 70 translators were commissioned to complete the project. There are so many translators are available on web like Easy Hindi Typing, Translate ,Google Translate, Typing Baba, Lingvanex. Google Translator was established in 2004 which covers more than 100 languages with 99 % of accuracy. Typing Baba provides various tools like Typing Test, Online Keyboard , Translators, Typing tutor for typing and even games are available at one place. Behind this Typing Baba guarantee about accuracy and the speed of functioning.

Lingvanex was working on translations since 2012 and today they got 25 millions of application downloads with hundreds of thousands users monthly. In 2016 they moved to perspective technology of neural networks to create a human alike machine translation.
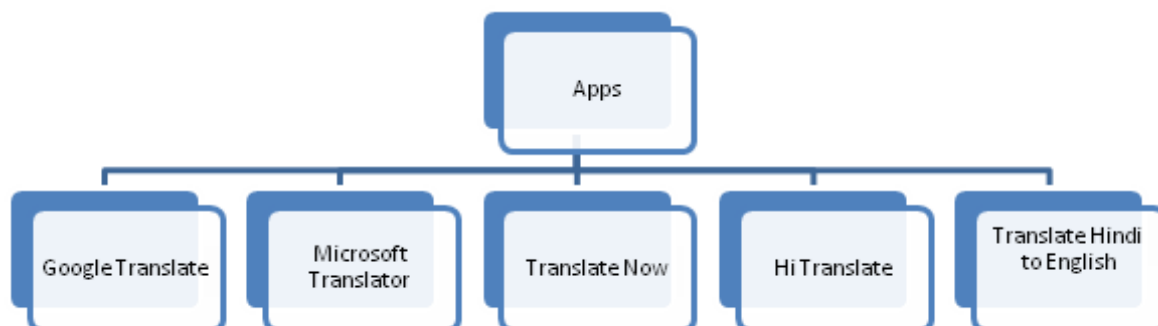
There are so many translators are available on App store like Google Translate, Microsoft Translator, Translate Now, Hi Translate, Translate Hindi to English. Google Translator was established in 2004 which covers more than 100 languages with 99 % of accuracy. Microsoft Translator is a multilingual machine translation cloud service provided by Microsoft . It's a part of cognitive services. This app is available for Windows, Windows phone, iPhone, and Apple Watch, and Android phone and Android Wear.

1. **Survey Report**

The survey is about Machine Translators and Google Translator. The main aim of this survey isto find out that how many many users know about various translators. The survey was conducted on 27th May, 2021. The information was gathered through Google Form. The survey have two sections. The first section is about the introduction of and the second section is about the various questions related to treanslators.

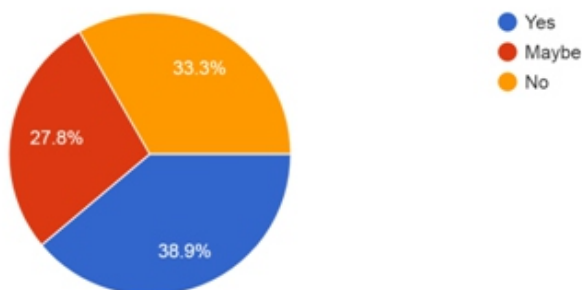There were 20 respondents and they were students and teachers of various schools and colleges.

From the survey, we know about ……

Do you know how to use Computer /Smart Phone / Laptop or Tab?
18 responses
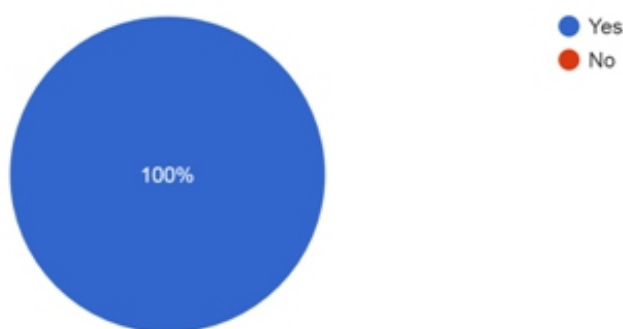
100% users know about the use of Computers/ Smart Phone/ Laptop
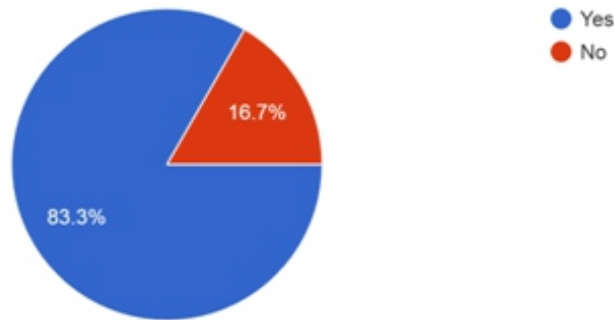
Have you learnt some new applications for translation language during this pandemic period?
18 responses

38.9% users learnt some new applications for translation language during this pandamic period, 27.8% Maybe and 33.3% Not learnt new applications.

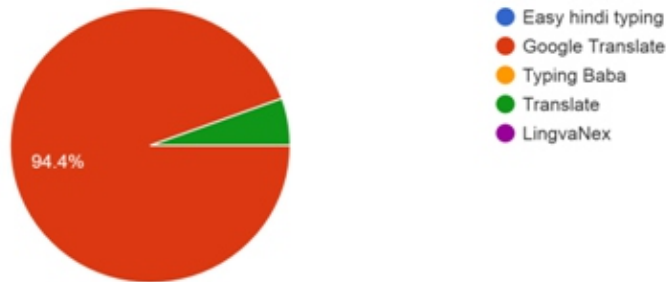## Q3. Have you ever used any Language translator?
18 responses

● Yes
● No

16.7%

83.3%

83.3% users use Language Translators for translations and 16.7% never use..

Q4. Which website is more suitable for language translator?
18 responses

● Easy hindi typing
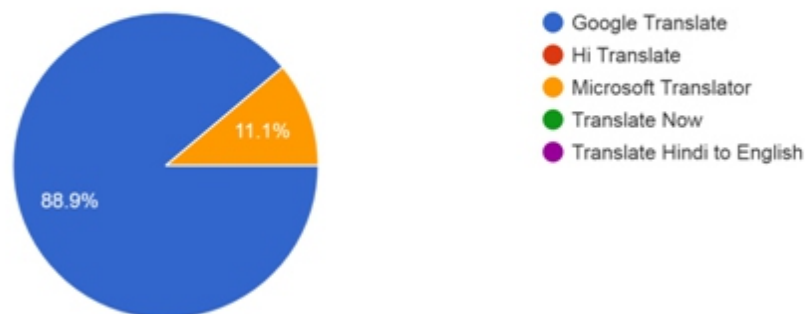● Google Translate
● Typing Baba
● Translate
● LingvaNex

94.4%

94.4% users opt for Google Translate as the most suitable website for Language Translator and few of them opt for Translate.

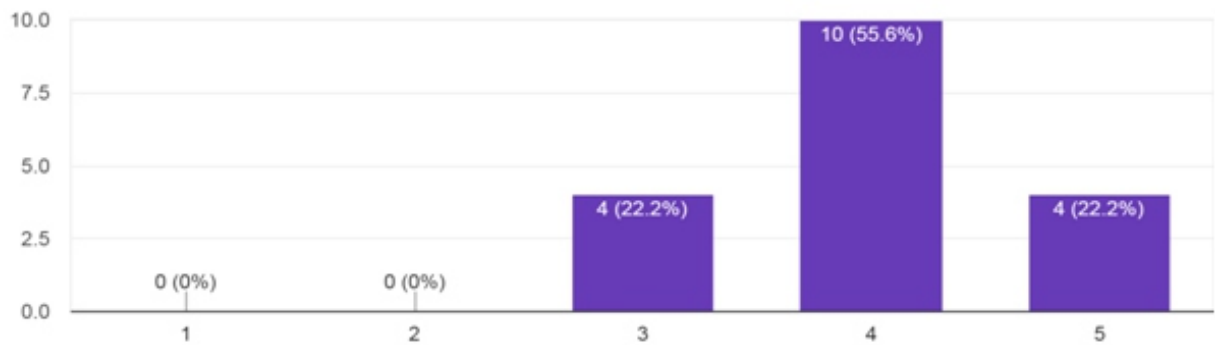## Which app is more suitable for language translator?
18 responses

● Google Translate
● Hi Translate
● Microsoft Translator
● Translate Now
● Translate Hindi to English

11.1%

88.9%

88.9% users opt for Google Translate App and few of them opt for Microsoft Translator.

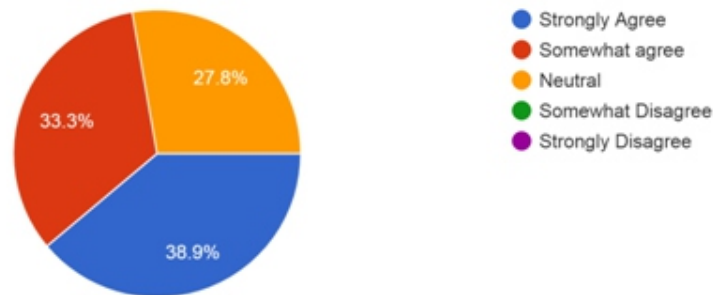How likely are you to recommend these apps/sites on a scale of 0 to 5?

18 responses

users scale these apps/sites 4 on a scale of 0 to 5, 4 users scale it as 3, and 4 users scale it as

How strongly you agree with the following statement: Language translator is properly working as much as you want.
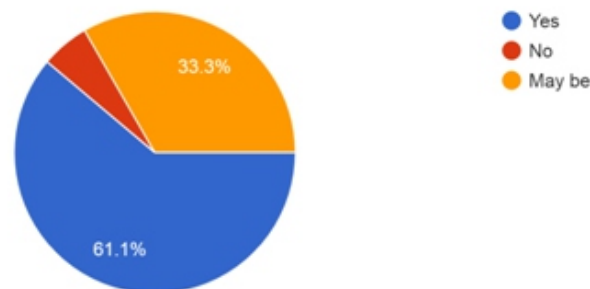
18 responses

38.9% users strongly agree with that the language translators is properly working as much as they want, 33.3% somewhat agree and 27.8% are neutral.

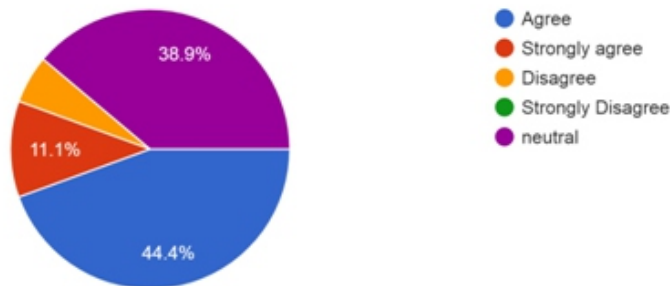Will Google Translates updates end professional translations?

18 responses

61.1% agreed with that the Google Translates updates end professional translations, 33.3% are not.

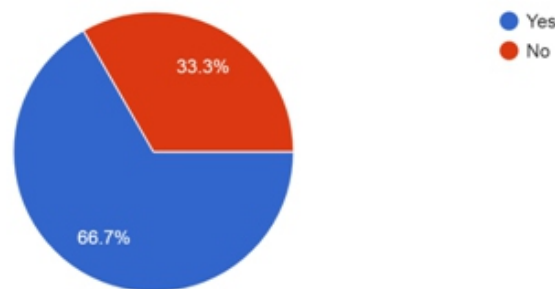Do you agree that Google Translator's still not enough for medical information?
18 responses

- Agree
- Strongly agree
- Disagree
- Strongly Disagree
- neutral

44.4% users are agree that Google Translator's still not enough for medical information, 38.9% are neutral, 11.1% are strongly agree.

Do you publish texts that are translated by Google Translate without having a properly trained native speaker checking them?
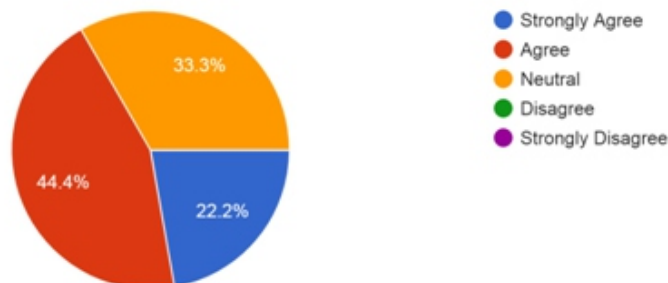18 responses

- Yes
- No

66.7% users are publish texts that are translated by Google Translate without having a properly trained native speaker checking them, 33.35 are not.

Do you agree that Google Translate needs a lot of improvement in the context of translation attempts within Indian languages?
18 responses


- Strongly Agree
- Agree
- Neutral
- Disagree
- Strongly Disagree

44.4% users are agree that Google Translate needs a lot of improvement in the context of translation attempts within Indian languages, 33.3% are neutral and 22.2% are strongly agree regarding same.

Do you think that Is it still worth learning other languages if technology may soon allow for instant and accurate translations?
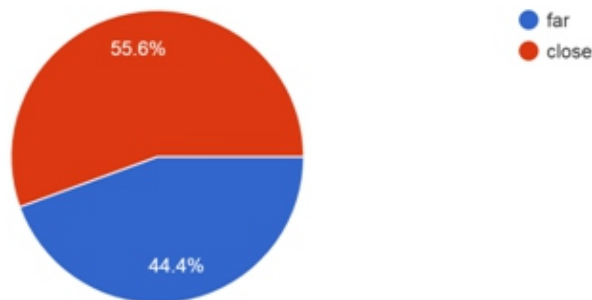
18 responses

- Yes
- No
- Maybe

16.7%

83.3%
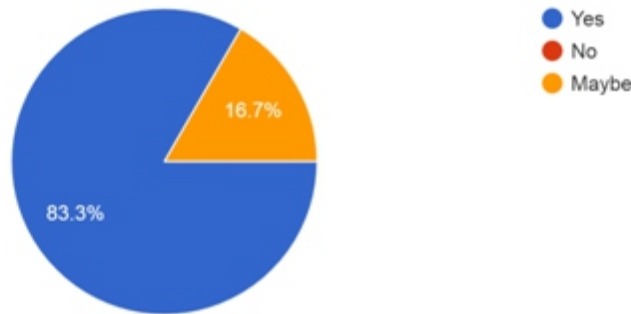
83.3% users are thinking that is it still worth learning other languages if technology may soon allow for instant and accurate translations.

How close are we to seamless translation technology?

18 responses

- far
- close

55.6%

44.4%

55.6% users are said that we are close to seemless translation technology and 44.44% are far.

Will learning languages become less important as technology allows us to easily translate (and speak) other languages?

18 responses

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

38.9%

16.7%

22.2%

22.2%
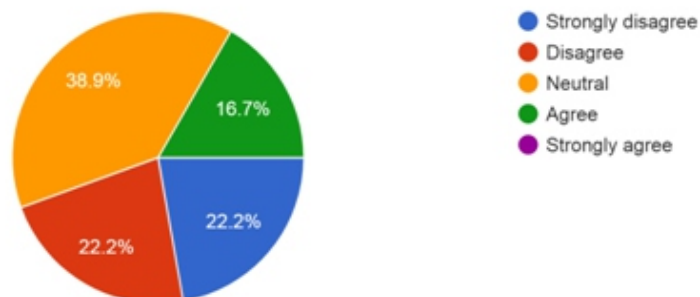
38.9% users are neutral about that the learning languages become less important as technology allows us to easily translate (and speak) other languages, 22.2% are disagree, 22.2% are strongly Disagree and 16.7% are agree.

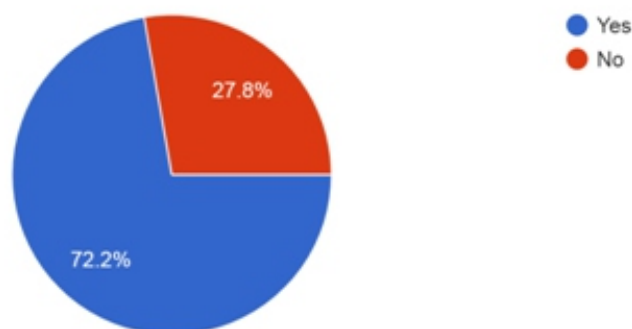Can a picture of a text be translated using Google Translate?

18 responses

1557**2.2% users are agree with that a picture of a text can be translated using Google Translate and 27.8% are not.**

CONCLUSIONS

- To summarize that most of the users are used Google Translators Sites and Apps for translations in any languages.
- We identified the following reasons to justify as to why most of the developed MT systems for Indian languages have followed the rule-based, hybrid and statistical approach.
- Most of the Indian and non-Indian MT systems developed so far are developed for specific domains such as tourism, health care, children stories, medical, news headlines, technical documents, government circulars and notifications etc. They have used rule based approach asitprovidesbetterperformanceandaccuracyifthesetofrulesisundercontrol.
- The Indian languages are morphologically rich in features and agglutinative in nature, hence rule-based approaches may fail in situations where full-fledged general purpose MT systems are to be developed because the number of rules would be very high.
- Support of linguistic experts is essential for developing rule-based MT systems hence many researchers are now working on statistical and hybrid approaches.

References

[1] Sitender & Seema Bawa, (2012) "Survey of Indian Machine Translation Systems", *International Journal Computer Science and Technolgy*, Vol. 3, Issue 1, pp. 286-290, ISSN : 0976-8491 (Online) | ISSN : 2229-4333(Print)

[2] Sanjay Kumar Dwivedi & Pramod Premdas Sukhadeve, (2010) "Machine Translation System in Indian Perspectives", *Journal of Computer Science* 6 (10): 1082-1087, ISSN 1549-3636, © 2010 Science

[3] John Hutchins, (2005) "Current commercial machine translation systems and computer-based translationtools:systemtypesandtheiruses",*InternationalJournalofTranslation*vol.17,no.1-2, pp.5-38.

[4] Vishal Goyal & Gurpreet Singh Lehal, (2009) "Advances in Machine TranslationSystems",

[5] *National Open Access Journal,* Volume 9, ISSN 1930-2940 http://www.languageinindia.

[6] LathaR.Nair&DavidPeterS.,(2012)"MachineTranslationSystemsforIndianLanguages",

[7] *International Journal of Computer Applications* (0975 – 8887) Volume 39– No.1

[8] Vishal Goyal & Gurpreet Singh Lehal, (2010) "Web Based Hindi to Punjabi Machine Translation

System", *International Journal of Emerging Technologies in Web Intelligence*, Vol. 2, no. 2, pp. 148-151, ACADEMYPUBLISHER

[9]   Shachi Dave, Jignashu Parikh & Pushpak Bhattacharyya, (2002) "Interlingua-based English-Hindi Machine Translation and Language Divergence", *Journal of Machine Translation*, pp.251-304.

[10] Sudip Naskar & Shivaji Bandyopadhyay, (2005) "Use of Machine Translation in India: Current status" *AAMT Journal*, pp.25-31.

[11] Sneha Tripathi & Juran Krishna Sarkhel, (2010) "Approaches to MachineTranslation",

[12] International journal of Annals of Library and Information Studies, Vol. 57, pp. 388-393

[13] Gurpreet Singh Josan & Jagroop Kaur, (2011) "Punjabi To Hindi Statistical Machine Transliteration", *International Journal of Information Technology and Knowledge Management* , Volume 4, No. 2, pp. 459-463.

[14] S. Bandyopadhyay, (2004) "ANUBAAD - The Translator from English to Indian Languages", *in proceedings of the VIIth State Science and Technology Congress*. Calcutta. India.pp. 43-51

[15] R.M.K. Sinha & A. Jain, (2002) "AnglaHindi: An English to Hindi Machine-Aided Translation System",*InternationalConferenceAMTA(AssociationofMachineTranslationintheAmericas)*

[16] Murthy. K, (2002) "MAT: A Machine Assisted Translation System", *In Proceedings of Symposium on Translation Support System(STRANS-2002)*, IIT Kanpur. pp.134-139.

[17] Lata Gore & Nishigandha Patil, (2002) "English to Hindi - Translation System", *In proceedings of Symposium on Translation Support Systems*. IIT Kanpur. pp.178-184.

[18] Kommaluri Vijayanand, Sirajul Islam Choudhury & Pranab Ratna "VAASAANUBAADA - Automatic Machine Translation of Bilingual Bengali-Assamese News Texts", *in proceedings of Language Engineering Conference-2002*, Hyderabad, India © IEEE ComputerSociety.

[19] Bharati, R. Moona, P. Reddy, B. Sankar, D.M. Sharma & R. Sangal, (2003) "Machine Translation: The Shakti Approach", *Pre-Conference Tutorial,ICON-2003.*

[20] S. Mohanty & R. C. Balabantaray, (2004) "English to Oriya Translation System (OMTrans)" cs.pitt.edu/chang/cpol/c087.pdf

[21] Ananthakrishnan R, Kavitha M, Jayprasad J Hegde, Chandra Shekhar, Ritesh Shah, Sawani Bade & Sasikumar M., (2006) "MaTra: A Practical Approach to Fully- Automatic Indicative English- Hindi Machine Translation", *In the proceedings of MSPIL-06.*

[22] G. S. Josan & G. S. Lehal, (2008) "A Punjabi to Hindi Machine Translation System", *in proceedings of COLING-2008*: Companion volume: Posters and Demonstrations, Manchester, UK, pp.157-160.

[23] Sanjay Chatterji, Devshri Roy, Sudeshna Sarkar & Anupam Basu, (2009) "A Hybrid Approach for Bengali to Hindi Machine Translation", *In proceedings of ICON-2009, 7th International Conference on Natural Language Processing,* pp.83-91.

[24] Vishal Goyal & Gurpreet Singh Lehal, (2011) "Hindi to Punjabi Machine Translation System", *in proceedings of the ACL-HLT 2011 System Demonstrations*, pages 1–6, Portland, Oregon, USA,21 June2011.

[25] Ankit Kumar Srivastava, Rejwanul Haque, Sudip Kumar Naskar & Andy Way, (2008) "The MATREX (Machine Translation using Example): The DCU Machine Translation System for ICON 2008", *in Proceedings of ICON-2008: 6th International Conference on Natural Language Processing*, Macmillan Publishers, India,http://ltrc.iiit.ac.in/proceedings/ICON-2008.

[26] hutchinsweb.me.uk/Nutshell-2005.pdf

[27] John Hutchins "Historical survey of machine translation in Eastern and Central Europe", *Basedon an unpublished presentation at the conference on Crosslingual Language Technology in service of an integrated multilingual Europe*, 4-5 May 2012, Hamburg, Germany. (www.hutchinsweb.me.uk/Hamburg-2012.pdf)

[28] Sampark: Machine Translation System among Indian languages (2009) http://tdil-dc.in/index.php?option=com_vertical&parentid=74,http://sampark.iiit.ac.in/

[29] Akshar Bharti, Chaitanya Vineet, Amba P. Kulkarni & Rajiv Sangal, (1997) "ANUSAARAKA: Machine Translation in stages', *Vivek, a quarterly in Artificial Intelligence*, Vol. 10, No. 3, NCST Mumbai, pp.22-25