# *The Role of Human Translator When Using Machine Translation: "The Case of Maintenance Domain at ArcelorMittal Annaba Company"*

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**Abstract:**

*Translation is a time consuming task. This motivates researchers to invent and develop programs and software in order to facilitate the work of translation. However these software carry some weaknesses that oblige the human translator to be careful while using them. In our paper, we try to demonstrate the role of human translator when using machine translation in the field of maintenance at ArcelorMittal Annaba Company where the mistake in translation at the industrial domain might lead to great misleading and miscomprehension. The methodology we have used in our demonstration is passing some technical phrases through Google Translator and then showing its misleading translation and providing our recommendations as solutions.*

## 1. Introduction

These days, no one denies the use of technology in all the scientific and educational domains. Translation is one field where we notice the wide use of translation software because the human translator does not have enough time to translate hundreds of copies of technical, business, scientific and cultural documents or even books. Also because of the rapidity and the efficiency of these

software in translating books and documents. This use of technology in translation is threatening the future of human translators as Kay (1997: 3) points out "The world is badly in need of translators". This advancement of technology is forcing the human translator to cope with it in order not to lose his existence. His contribution lies in detecting the weaknesses of machine translation and finding solutions to them as Van der Meer (2003) states that" *Machine Translation is not perfect, but it has become an economic necessity. We must learn how to use it and how to optimize its benefits in practical business environments*". Hence machine translation and despite its weakness is gaining ground whereas human translation and despite its importance it is losing ground simply because the cost of a human translated document is ten times the cost of machine translated one. The time needed to translate a document with machine translation is much better and faster that with human translation. So it is up to the human translator to prove that he is and will be always useful.

## 1.1 What is Machine Translation?

Machine translation is an automatic translation system that uses an advanced computational linguistic analysis that changes a text from the source language to the target language. Machine translation, commonly known as MT is defined by Hutchins, W. J. and Somers (1992) as "*translation from one natural language (source language (SL) to another language (target language (TL)) using computerized systems and, with or without human assistance*".

Oxford online dictionary defines machine translation as "*Translation carried out by a computer*"

Machine translation means the total absence of human translator. It is the machine or the computer that processes and

converts words, sentences, paragraphs, articles and books from the mother or source language to the target language.

## 1.2 Types of Translation

Hutchins and Somers (1992: 148) distinguish four types of translation:

- Traditional Human Translation:
This type of translation is carried out fully by a human translator and without any use of a machine or a computer.
- Machine-Assisted Human Translation:
With this type there is a combination of both the human and machine translation. The human translator does the translation with help of the machine or software.
- Human-Assisted Machine Translation:
With this type there is also a combination of both the human and machine translation. The machine or the software does the translation with help of human tran
- Fully Automatic Machine Translation:
This type of translation is carried out fully by the machine or the software and without any intervention of the human translator.

## 1.3 Machine Translation vs. Human Translation

Since machine translation still carries some weaknesses despite the development it is reaching, it needs to be always assisted by human translation. This vision is supported by the US Department of Labor where it mentioned in 2014 in its report retrieved from www.information-age.com that "*it is seldom, if ever, sufficient to use machine translation without having a human who is trained in translation available to review and correct the translation to ensure that it is conveying the intended message*". Hence instead of exchanging the critics

of both sides and talking about their advantages and disadvantages it is better to find a solution to use both of them. We should be intelligent enough to take advantage from the rapidity and efficiency of machine translation and of course doing it by a skillful, knowledgeable and experienced human translator and this in order to avoid errors and misleading translation.

## 2. Methodology

Our experiment proceeds by translating 13 examples belonging to technical domain more precisely to the process and maintenance field of ArcelorMittal Annaba Company. We have used Google translator because it is more frequently used by people who are not able to have a technical and specialized human translator and because also it is easily done without any payment. We have translated 5 short examples from English to French and 5 short examples from French to English. We have also translated 3 longer examples from English to French to test if the length of the translated passage is a factor affecting the quality of translation or not. Hence our investigation is purely about technical language which is characterized by its simple style but its content is full of specific and technical terminology. This terminology is not easy to be understood by a human translator who is not experienced in technical domain.

## 2.1 Examples translated from English to French

| English | French |
|---------|--------|
| the scope of work includes the repair and commissioning of the blast furnace **blower** | **la portée des travaux** comprend la réparation et la mise en service du **ventilateur** de haut fourneau |
| The mechanical engineer should inspect the **overhauling** of the direct current motor before the assembly of the other accessories | L'ingénieur mécanicien doit inspecter **la refonte** du moteur à courant continu avant que l'ensemble des autres accessoires |
| This damage of the crankshaft is because of the bad quality of oil | Ces **dommages** du vilebrequin est à cause de la mauvaise qualité de l'huile |
| We have to look for qualified technicians to carry out the removal of burnt cards and their replacement by new and **genuine** ones. | nous devons chercher des techniciens qualifiés pour mener à bien le retrait des cartes brûlées et leur remplacement par les nouveaux et **authentiques.** |
| the problem of blow off valve of the emergency blower must be sorted out as soon as possible in order to avoid the shutdown of blast furnace | le problème de la soupape de décharge de la soufflante d'urgence doit être réglé le plus rapidement possible afin d'éviter la fermeture de haut-fourneau |

**Table 1: Translation from English to French**

## 2.2 Examples translated from French to English

| French | English |
|---|---|
| Nécessité d'une remise à l'état standard de la soudeuse avec le remplacement de ses accessoires et la mise à jour de son system d'exploitation | Need a <u>discount</u> to the standard state of the welder with the replacement of accessories and the update of its operating system |
| Moteur trop chaud peut être à cause d'une surcharge. Donc il faut faire une mesure de puissance; si nécessaire installer un moteur plus grand ou réduire la charge | Motor too hot may be due to overloading. So make a measurement power; if necessary install <u>a motor large</u> or reduce load |
| suite à une injection d'une quantité insuffisante d'oxygène, le "soufflage" n'est pas bien terminé et la lance principale est bloquée | following injection of an insufficient amount of oxygen , the " blowing " is not properly completed and the main lance is blocked |
| le convertisseur est percé à cause des fuites d'eau et si ce problème n'est pas réglé il y a un risque d'explosion qui mène par la suite à l'arrêt total de la production au niveau de cet atelier. | the converter is <u>drilled</u> because of water leakage and if this problem is not resolved there is a risk of explosion which leads eventually to the total <u>cessation</u> of production at the workshop. |
| Les cylindres de train de laminage sont usés car la fréquence de travail a doublé. Il faut les changer ou bien réduire le volume de travail. | rolling mill rolls <u>are used</u> as the working frequency has doubled. We must change or reduce the workload. |

**Table 2: Translation from French to English**

## 2.3 Longer Examples translated from English to French

| English | French |
|---|---|
| After obtaining the solidified slabs, they are transported by roller tables to the hot cutting machines where they are cut with oxyfuel flame to the dimensions required for the subsequent finished product in the mills. | Après avoir obtenu les dalles solidifiées, elles sont transportées par des tables à rouleaux pour machines de découpage à chaud où ils sont coupés avec une flamme oxy-combustible aux dimensions requises pour le produit fini ultérieur dans les usines. |
| The reactions fuels are coke and injected coal dust. These materials are placed in layers and the heat generated by coke burning melts them. At the same time, the chemical reactions lead to the iron separation while the rest of the non-metal components make up the remaining slag. This is discharged, the same as the hot iron, at the bottom of the blast-furnace. After cooling, the slag is processed and becomes a raw material for constructions and infrastructure. The liquid iron is, in turn, a raw material used to produce liquid steel. The liquid iron, at 1450° C, is transported by special rail wagons, named Torpedo ladles, to the Steel Melting Shop. | Les réactions combustibles sont le coke et la poussière de charbon injecté. Ces matériaux sont placés dans des couches et de la chaleur générée par combustion du coke les fait fondre. Dans le même temps, des réactions chimiques conduisent à la séparation du fer tandis que le reste des composants non métalliques constituent le laitier restant. Ceci est déchargé, le même que le fer chaud, au bas du haut-fourneau .Après refroidissement, le laitier est transformé et devient une matière première pour la construction et l'infrastructure. Le fer liquide est, à son tour , une matière première utilisée pour produire de l'acier liquide. Le fer liquide, à 1450 ° C, est transporté par wagons spéciaux, nommés Torpedo Louches , à l'acier fusion Shop. |
| The immediate cause of the explosion was water and hot molten materials mixing within the lower part of the furnace vessel. At the time of the explosion, attempts were continuing to rectify the abnormal operating conditions that this had created and to recover the furnace. | La cause immédiate de l'explosion de l'eau et des matières fondues à chaud le mélange dans la partie inférieure de la cuve du four. Au moment de l'explo-sion, les tentatives se poursuivent pour rectifier les conditions anormales de fonctionne- ment que cela avait créé et pour récupérer le four |

**Table3: Longer examples translated from English to French**

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## 3. Results and Discussion

### 3.1 Results of translation of English to French

1st Example**:** The "scope of work" will be well understood if the human translator translates it to French as « l'etendu/charge de travail » and not "la portée des travaux". The blower is not "ventilateur" but rather and better "soufflante" because the volume of air that it blows in this industrial area is huge.

2nd Example**:** Overhauling is rather « révision » in French and not « refonte"

3rd Example**:** We see that the translation of this example is perfect

4th Example**:** Here the overall translation is acceptable except for the word genuine which is translated to « authentiques » and which is better to be translated « originales".

5th Example**:** We see that the translation of this example is good and acceptable

### 3.2 Results of translation of French to English

1st Example**:** "remise à l'état" is not counted in English. It is rather « repair or reshaping »  and this is a wrong translation.

2nd Example**:** Here "a motor large" should only be inversed hence the meaning is acceptable so the translation is ok.

3rd Example**:** The translation of this example is perfect

4th Example**:** The translation here is very much acceptable however it can be refined better by saying " broken out" instead of "drilled" and "stoppage or shut down" instead of "cessation"

5th Example**:** In this example "are used" leads really to misunderstanding because "sont usés" in French means in English "are worn out" and not are used. We see that this is a very dangerous mistake of translation in an industrial field where the accuracy is primordial.

### 3.3 Results of translation of longer examples of English to French

1st Example**:** Slabs are « brames » in French and not « dalles » and « mills » in this context are « laminoirs » and not « usines »

2nd Example**:** Despite the length of this passage we can say that the translation is acceptable except for the specific terms like torpedo ladles that should be translated to "poche tonneau" and steel melting shop that should be " acierie à oxygène"

3rd Example**:** The translation of this example is really misleading because the water here is the cause of the explosion that took place in the blast furnace and it is not its explosion as translated in French "l'explosion de l'eau"

## 4 Conclusions of the Study

From this small investigation a lot of conclusions can be drawn concerning the role of human translation when using machine translation in technical and industrial field. Therefore we sum up our findings as:

- The human translator should not consider machine translation as an enemy that threats his existence or the existence of his profession. He should rather consider himself an ally to it because without him its efficiency and accuracy is always doubtful and questioned.

- The result of translation of the 13 examples we have translated by Google Translator are generally acceptable. We believe that this is because they are technical where the style

and form of sentences are simple which leads to successful translation.

- From the second conclusion we conclude that the human translator should have some technical knowledge about the technical concepts of the domain he is translating. If for example he has document to translate about blast furnace maintenance he should at least know the process of this production unit and its main machines and the different types of breakdowns that may happen in this industrial area.

- The main mistakes we have detected from the 13 translated examples either from English to French or the opposite are related mainly to the technical and specific terminology. Hence we suggest that the human translator should always check or review the machine translated text by using a technical terminology dictionary. However this dictionary should contain the different contexts of fields of terminologies because a technical term can have different meanings depending on its use in each context. The French term "roulement" for example can be translated to "rolling" when we talk about a rolling mill process or breakdown or "bearing" when we talk about mechanics. The same term in French can be translated to "running" and it has no relation with technical language.

- In an industrial domain the human translator should have a daily and frequent contact with technical engineers, technicians and workers. He should learn from them the different roles and processes of each machine or unit because if he does not understand the technical concepts he will not be able to translate technical document or to review them when they are translated by machine translation.

- Our humble experiment allowed us to detect the main mistakes that are related mainly to technical and specific terminology. With some examples these mistakes are fatal and

lead really to misleading like the case of the 5[th]example of translation of French to English and the 3rd case of longer examples translated from English to French.

Finally, we see that our investigation is only a small one that needs to be carried out again with the more translation examples and through the use of different types of machine translation and not only Google Translator. We believe also that our study needs to be carried out again with the collaboration of Automatic Language Treatment specialists to look for a solution of involving the human translator while using machine translation in a better and efficient way.

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