

## **How to choose and start working with the right TMS for your company**

# Contents

<b>Chapter 1. Introduction to TMS.....</b>	<b>5</b>
What is a TMS?.....	6
How does it differ from CAT?.....	7
Cloud vs. onsite system.....	8
Public, private or hybrid cloud.....	9
Market overview.....	11
<b>Chapter 2. TMS in Corporate Language Policy.....</b>	<b>15</b>
Which companies need a TMS?.....	16
What are common concerns about using a TMS?.....	17
Future of TMSs in business setting.....	19
<b>Chapter 3. Decision-making process.....</b>	<b>20</b>
Analyzing your translation process.....	20
Researching the TMS market.....	21
Budgeting.....	22
<b>Chapter 4. Key TMS features.....</b>	<b>24</b>
Project management .....	24
Searcher.....	25
Notifications.....	26
Analytics.....	28
Workflows.....	30
Working outside.....	32
File formats .....	32
Anonymization.....	35
Mobile version.....	35
Finance management .....	36
Rate cards.....	37
Purchase orders.....	37

Content management.....	39
Alignment.....	39
Terminology extraction.....	41
Translation memories .....	41
Termbases.....	42
Concordance.....	43
Language variants.....	44
Translation editor (Workbench).....	45
Inline tags.....	46
Preview.....	46
Filtering.....	48
Offline editor.....	49
Quality management.....	50
Automatic QA.....	51
LQA.....	52
Machine translation.....	54
Connectors.....	56
Security.....	57
Documentation.....	58
Support.....	59
Product development.....	61
<b>Chapter 5. Go-Live.....</b>	<b>63</b>
Preparing for launch.....	63
Managing user access rights and roles.....	65
Setting up TMS to work with your vendors.....	66
Agreeing on best cooperation practices.....	67
<b>Chapter 6. Glossary.....</b>	<b>70</b>
Data Protection Agreement (DPA).....	70
Fuzzy matches.....	70

Inline tag.....	71
Localization (L10n).....	71
Language Service Provider (LSP).....	71
Machine translation (MT).....	71
Non-Disclosure Agreement (NDA).....	72
Post-editing (PE).....	72
Service Level Agreement (SLA).....	72
Termbase (TB).....	73
Translation memory (TM).....	73

# Chapter 1. Introduction to TMS

*Learn who needs this manual and when a TMS is a better choice than a CAT tool.*

This manual will help you go through the process of **choosing the right Translation Management System (TMS) for your company**. A TMS is a software platform designed for managing translation and localization projects in a single place.

## Who is this manual for?

It provides hands-on information for **translation and localization professionals** working both in **enterprises** and for **language service providers**. It will be useful for those who already have some experience with CAT tools, but are now looking for more comprehensive solutions. The target audience also includes persons wishing to bring the work onto a new level by starting to work with a TMS or change to another one.

It is not another marketing presentation. Quite the contrary: it is a very practical documentation on **TMS features** ([on page 24](#)) important from business perspective. There is no one-fits-all solution.

Every company has different needs. However, there are some common features that you should take into account when choosing your ideal tool. And you will find them here.

By creating this documentation, I have collected all the knowledge and experience I have gained so far in the translation and localization industry. There is a lot of information on this topic on the web, but it is mostly dispersed so you have to spend a lot of time searching and browsing through data you need. Therefore, this compact manual is perfect for you if you need to decide what to look for in a TMS.

## What can you find in this manual?

- Brief [description](#) ([on page 6](#)) and [overview](#) ([on page 11](#)) of TMS available in the market (2022)
- Reasons [for](#) ([on page 16](#)) and [against](#) ([on page 17](#)) having a TMS
- [Steps](#) ([on page 20](#)) that you should take when deciding to buy a TMS
- Analysis of [key features](#) ([on page 24](#)) of a TMS and how they can help your company tackle translation and localization challenges
- Practical information shown on an [XTM](#) example
- What to [do after](#) ([on page 67](#)) you have launched a TMS in your company

## Why have I chosen XTM?

Because I know this system and I work with it every day. Please note that I am not related to XTM International, the software provider, in any way and this is not a promotional text. What's more, XTM's documentation is very complex, it is available in so many different places and is not much user-friendly. That's why I wanted to make its key parts more accessible and succinct for future users.

## Your goal? My answer.

So if you have a goal: **to find the right translation solution for your company**, but you don't know what and how, I hope it will be clearer once you have read everything.

For your convenience, you can download this manual also as a [pdf file](#).

### Related information

TMS in Corporate Language Policy (*on page 15*)

Budgeting (*on page 22*)

## What is a TMS?

A **translation management system (TMS)** is a type of software used for comprehensive work with translation projects. It is a centralized platform that comprises various tools, performs an abundance of tasks, and allows to achieve numerous goals

Through its process optimization and linguistic technology features, each TMS aims to:

- automate repeatable and non-essential tasks done by a project manager in the translation process
- maximise translator efficiency
- reduce costs
- cut down on processing time
- monitor the translation status
- standardise cooperation with translation vendors
- ensure transparency of workflows
- integrate with existing corporate systems
- store completed translations

As a result, a TMS is a complex content management tool used in the translation and localization process, that comprises:

- translation editor
- quality assurance tool
- translation memory management
- terminology database
- finance management tools
- API interface for connection with other systems and engines (CMS, machine translation, other third-party systems)

All of these parts support and accelerate the translation process.

## Brief history of TMS

Here is how a TMS originated:

- **2000s:** CAT tools enter the translation industry and make a revolution: from paper-based and document-only translation process to translation memories and working on segments in a dedicated software
- **2010:** first on-premise TMSs appear on the market and are used by global enterprises
- **2015:** TMSs move to the cloud as a result it is easier and quicker to share translation resources with all process participants
- **2020:** the pandemic accelerated the process of shifting to cloud-based TMSs to enable home office in dispersed environments. Due to rapid deployment of additional features, today's systems are rather advanced hubs for dealing with content technologies (from file management, financial reporting, machine translation and integration with other systems for more automated workflows).

## How does it differ from CAT?

A **CAT (computer-assisted translation or computer-aided translation) tool** is software used to support a translator facilitating the translation process.

Its aim is to enhance speed, quality and consistency through various features, such as translation memory, term bases, metrics (file analysis), quality assurance and plug-ins (e.g. for machine translation).

As a result, a CAT tool is mostly used by translators and revisers, while TMSs are used also by project managers. Each TMS has a CAT tool as one of its components.

The **most popular** CAT tools in the market are:

- SDL Trados Studio
- memoQ
- Wordfast (Classic & Pro)
- Déjà Vu
- Across
- Transit (by STAR)

There are also some **free** tools for users not requiring sophisticated features:

- OmegaT
- Wordfast Anywhere
- MateCat
- SmartCAT
- Virtaal

## Cloud vs. onsite system

*TMSs can be offered as cloud-based or on-premise solutions.*

Most of the TMSs available on the market are offered:

- as cloud-based only
- as onsite only or
- in the hybrid model: cloud and onsite with only some features different

There are companies which would only choose the solution that is physically installed on their servers due to security issues and they have resources to manage it. Add to that a high initial price, difficult installation, maintenance costs and the need to pay for each upgrade (after a certain grace period is over) and you will quickly find out why the cloud-based TMS is a better option for you.

### What are the advantages of the cloud system?

- Lower costs of almost everything: from setup, maintenance, subscription fees
- No need to have a dedicated maintenance team
- Flexibility of adapting the TMS to your needs
- Scalability of paying only for what you use
- Possibility to access it from any place in the world, without VPN, at any time – you only need Internet access
- Update of translation resources in real time

- Ongoing monitoring of translation projects
- Easier cooperation with multiple vendors at the same time
- Backup of content which is hosted on multiple servers (reliability)
- Security of data thanks to high-standard security protocols (e.g. no need to send TMs by email)
- Integration with other cloud-based systems (e.g. Wordpress)
- For bigger and wealthier enterprises a private cloud is an option.

### **Biggest threats to using a cloud-base solutions include:**

- [Security \(on page 57\)](#) – your data is still outside your organization; this is solved by [Non-Disclosure Agreement \(NDA\)](#)
- Reliability – problems with accessibility when the servers are down; this is solved by [Service Level Agreement \(SLA\)](#)

## Public, private or hybrid cloud

*You can decide to have your TMS installed in a variety of ways.*

Online service providers offer solutions to their clients on:

- private cloud
- public cloud
- hybrid cloud

### **What's the difference between them and how does it affect your decision on which TMS to buy?**

There's no one type of cloud that's right for every organization. As a result, a choice of a deployment method depends on your business needs.

A **private cloud** is cloud computing with resources used **exclusively** by one business. It can be physically located at your organization's on-site data center, or it can be hosted by a third-party service provider. But in this case, the services and infrastructure are always maintained on a **private network** and the hardware and software are dedicated solely to one organization.

A **public cloud** is cloud computing with resources (hardware, software, storage, network devices, etc.) owned and operated by a third-party cloud service provider and delivered over the internet. Clients share the same infrastructure with other organizations (known as "tenants") accessing services and managing their accounts using a web browser.

A **hybrid cloud** is cloud computing that uses both public and private clouds, or combine online and on-premises resources. Infrastructure components can share the resources between public and private

cloud deployment depending on the business needs. It is often used by organizations that require assistance in the form of public cloud services e.g. to meet increased traffic demand or private clouds to handle sensitive data. It is the most complex solution requiring some IT knowledge.

In the table below you will find a **comparison of the most important cloud aspects**:

**Table 1. Comparison of top cloud features**

Aspect	Public cloud	Private cloud	Hybrid cloud
<b>Security</b>	<i>medium</i> there is always a risk of data disclosure due to resource sharing	<i>high</i> dedicated to one organization, more secure if on-site than online	<i>high</i> possibility of customized security measures
<b>Control</b>	<i>low</i> both over costs and infrastructure availability	<i>high</i> especially when stored on-site	<i>medium</i> lack of direct control over public infrastructure
<b>Customization</b>	<i>low</i> features are the same for all clients using it	<i>high</i> flexibility to meet specific business needs	<i>high</i> possibility to choose which resources are stored on which cloud
<b>Costs</b>	<i>low</i> you pay only for the service used and do not have to buy any infrastructure	<i>high</i> you incur initial costs of installation, then pay for each upgrade	<i>medium</i> flexible plans to meet specific demands
<b>Installation and maintenance</b>	<i>none</i> service provider is responsible for it	<i>required</i> only if it is stored on-site	<i>required</i> only if it is stored on-site
<b>Reliability</b>	<i>high</i> ensured by a variety of third-party servers and back-ups	<i>high</i> SLA performance and efficiency	<i>high</i> due to workload diversity
<b>Scalability</b>	<i>unlimited</i> resources are always available to meet any demand	<i>medium</i>	<i>high</i>

**Table 1. Comparison of top cloud features (continued)**

Aspect	Public cloud	Private cloud	Hybrid cloud
		depending on the subscription plan (may not meet unpredictable demands)	achieved without exposing sensitive IT workloads to the inherent security risks

Which solution to choose then? The answer is: the one that **meets the needs of your organization and is within your budget**. You are also limited to the offer that is available on the market. However, it is always good to know about all the benefits and drawbacks.

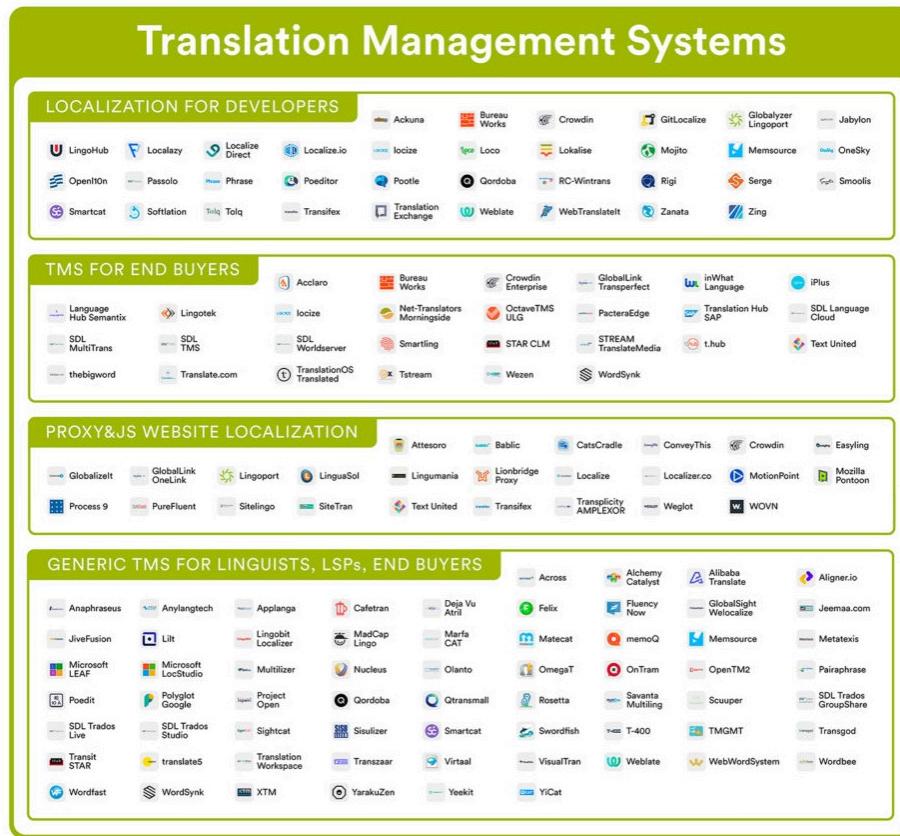
For example, if you wish to purchase a private cloud to use XTM, you should read its [specification](#).

## Market overview

*The market for TMSs is very varied and changes rapidly.*

There is a great number of Translation Management Systems available to meet different business needs. Below you can find a graphical representation from Nimdzi Language Technology Atlas 2020, listing all TMSs divided into special-purpose categories:

Figure 1. Translation Management Systems



Source: <https://www.nimdzi.com/nimdzi-language-technology-atlas-2020/>

Here is a list of most popular TMSs available on the market with a brief description:

Table 2. Key TMS market players

TMS	Description	Cloud deployment	On premises?	Editor
Memsource	AI-powered TMS for global enterprises and language service providers	Public cloud only	No	All major operating systems, including mobile
Phrase	platform for software localization	Public cloud only	Yes	Web only
XTM Cloud	AI-powered TMS for global enterprises and language service providers	Public or private	Yes	Web, mobile, offline

**Table 2. Key TMS market players (continued)**

TMS	Description	Cloud deployment	On premises?	Editor
Localise	platform for software and games localization	Public cloud only	No	Web only
Smartling	enterprise translation management software	Cloud deployment	No	Web only
memoQ cloud	Software as a Service translation management system	Public or private	Yes	Windows installable and web
Across	translation management system for enterprises and language service providers	Public or private	Yes	Desktop or web
Unbabel	platform for translating your customer service communications	Public cloud only	No	Web only
Transifex	translation & localization management platform for web and mobile apps	Public cloud only	No	Web only
Global-Link	cloud-based technology platform that optimizes translation management for businesses	Public or private	Yes	Installable and web
Smartcat	internet platform for translation project management	Public or private	No	All major operating systems and web
POEditor	cross-platform translation and localization management solution	Public cloud only	No	Web only
Wordbee	SaaS collaborative translation management system for enterprises and LSPs ( <i>on page 71</i> )	Public or private	Yes	Web only

**Table 2. Key TMS market players (continued)**

TMS	Description	Cloud deployment	On-premises?	Editor
Lilt	complete, high-quality online adaptive platform for enterprise translation	Cloud deployment	No	Web only
Crowdin	cloud-based solution that streamlines localization management	Public or private	No	Web only
RWS Language Cloud	next-generation complete intelligent translation platform	Public cloud	No	Integration with SDL Trados Studio

Source: <https://rubric.com/en-US/translation-management-system-comparison/>

For detailed information on a variety of Translation Management Systems you can consult [Nimdzi](#).



**Note:**

There are also a few interesting tools for you, e.g. [G2](#) or [Crozdesk](#) to check the rating of and compare the most popular TMSs including user reviews.

# Chapter 2. TMS in Corporate Language Policy

*It is good to know which companies should choose a TMS and how what their concerns are.*

From a business perspective, a **Corporate Language Policy** is a must for every multinational and multilingual corporation engaged in international operations. It should be drafted at the beginning of their globalization process along other important regulations and procedures such as Security Policy or Data Protection Policy. However, it is often not the case, which is a pity.

A Corporate Language Policy is a comprehensive strategy that defines the organization's approach to the language that is used in external and internal communication to be more diverse and inclusive.

The best option is to write it down in the form of an official document and make it available to all the employees worldwide.

It defines in particular:

- one global corporate language (e.g. English)
- what needs to be translated and into which languages
- how the language policy helps achieve corporate objectives
- what tools are used and by whom
- if the translation process is kept in-house or outsourced
- aspects of inter-cultural communication
- impact on other internal regulations e.g. employment policy, marketing strategy

While being a rather general and high-level document, a Corporate Language Policy may contain a more detailed **localization strategy** which focuses more on target markets and customers buying company's products. And here is where you should look when deciding upon a TMS. Its features must correspond to the goals set by the organization on how to communicate its message.

For example, if your company wishes to make only websites and customer service communication available in other languages, you may decide on a more localization-oriented TMS (such as [Localise](#)). However, when your targets are both marketing materials, IT software strings and corporate communication, then choose a comprehensive Translation Management System instead (e.g. [XTM](#), [Memsource](#)).

## Related information

[Introduction to TMS \(on page 5\)](#)

## Which companies need a TMS?

There may come a day in the life of an organization when the management considers the current translation and localization efforts are not enough for business operations and something must change.

### What are the reasons for a company to start thinking of buying a TMS?

- The management has decided to enter new markets or go global.
- So far the company has employed a few in-house translators who have worked with desktop [CAT tools \(on page 7\)](#) limited as to the sharing of translation resources ([TMs \(on page 73\)](#), [TBs \(on page 73\)](#)) and it has become more problematic because of their growing volume.
- The company has outsourced the whole translation process to a third party (agency, freelancers) and has no control over its translated content.
- There are more and more complaints about the quality of translations due to inconsistent terminology, no reuse of content, more work for internal reviewers.
- No one controls the costs of translations or knows how to reduce them.
- There are concerns about security of translated data and the need is to have it at a higher level.
- Translation resources are not stored in one place: each department has their own and there is no one who would collect and reuse them.
- The whole translation process takes a long time: internal stakeholders would like to make it quicker, also with the use of translation memories and machine translation.

A TMS can be a solution to any of the above challenges.

In addition, a TMS is the right tool for a company that:

- runs large localization programs
- cooperates with multiple vendors
- has large volumes of content to translate
- works with files in different formats (a TMS can process a variety of them so you can save on licenses for employees)
- operates in a strictly regulated environment (e.g. life sciences)
- wants to have the whole translation process centralized instead of dispersed in different departments, thus saving on costs through a group buying process of translation services.

However, a TMS is **not** the right tool for every organization. This can be when your company:

- is small or operates only in a few markets
- has a very limited localization budget
- has no in-house translation or localization experts
- already has a content management system (CMS) or a product management system (PIM) in place with translation features
- invests costs in a TMS (subscription or installation/maintenance fees) that exceed the savings generated from its use (TM discounts, [MT \(on page 71\)](#) use, less work for internal reviewers and due to content reuse)

In such cases CAT tools (with a server or group-sharing feature) or outsourcing the whole process to an [LSP \(on page 71\)](#) would be a better option.



**Remember:**

With the purchase of a TMS, a company needs to employ relevant specialists such as:  
Translation Coordinator, Translation Manager, Localization Specialist or Localization Engineer  
to manage the system and process.

## What are common concerns about using a TMS?

*As with every new tool, there is a risk your business will resist to the change.*

Once the management decides upon buying a TMS, different participants of the translation process may raise their objections. Here is what you may often hear from them and how you may reply:

**Table 3. Common concerns of potential TMS users**

<b>They say:</b>	<b>You reply:</b>
<i>It is very expensive so it is not worth it. We already spend a lot on translation.</i>	We have calculated it: we will save more on leveraging on centralized TMs than spend on the TMS. We will no longer pay twice for translation of the same content and will benefit from discounts on similar texts. We will have a bigger control over the pricing policy than it used to be so far.
<i>It is difficult to use. We would need ongoing technical support.</i>	Yes, that's true: new systems require time to learn. However, most TMS providers offer free initial training courses, catch-up webinars, support documentation and/or access to a Key Account Manager. You will also be able to get help from a dedicated Localization Specialist. We will also draft user manuals and guidelines for our internal stakeholders.

**Table 3. Common concerns of potential TMS users (continued)**

<b>They say:</b>	<b>You reply:</b>
<i>The translation process will take longer than now and time to market is crucial.</i>	TMSs make the translation faster by leveraging on translation memories and content reuse. They also have special features to automate a variety of tasks so forget about unnecessary steps in the process.
<i>Our reviewers will not be willing to use it.</i>	Explain that you will make the whole process user-friendly. Everyone will be able to work according to their preferences. Most TMSs allow for exporting file previews that can be worked on in a traditional way. But it is also possible to use the Editor saving on time and making the whole process quicker.
<i>They are used to working on standard documents.</i>	
<i>It will complicate our workflows. We do not want to change what is already functioning well.</i>	People are generally reluctant to change but it doesn't mean it has to be for the worse. Try to show each of them the benefits of using a TMS from their perspective. Focus mostly on cost- and time-savings and a bigger control over the whole process.
<i>Our current translation vendors will not want to use it. Each of them have their own TMS and CAT tools.</i>	Most TMSs enable exporting packages to be processed in any CAT tool (interoperability). As a result, <a href="#">LSPs (on page 71)</a> or freelancers can still use their preferred resources with a possibility to translate in the TMS Editor as well (thus saving on their license costs).
<i>I feel it more secure when all translation memories are saved on my computer. I don't trust cloud services.</i>	The TMS provider will sign an <a href="#">NDA (on page 72)</a> agreement with us and it ensures continuous back-up of our data on several secure servers. Anyway, you can always lose access to your hard drives due to a computer failure as well and then no one will be able to retrieve this content.
<i>I fear this change will have a negative impact on the translation quality. An IT tool cannot be better than human.</i>	All TMSs contain built-in <a href="#">QA (on page 51)</a> and <a href="#">LQA (on page 52)</a> features which automate quality assurance and allow you to spot mistakes sometimes not easily noticed by proofreaders.

## Future of TMSs in business setting

*Translation Management Systems are a novelty in the industry, but they still undergo many improvements.*

Here are some trends that we may expect TMSs to follow in the future:

- **interoperability with different CMSs** – so that content managers could be able to order translations within their own environment and save on licensing costs
- **connectivity with text authoring tools** – so that technical writers could leverage on the existing multilingual content
- **incorporation of business management functions** – to preview the localization cost and time-frame
- **integration with other enterprise systems** – such as general ledger applications and sales force automation tools
- **better TM leveraging** – so that project managers could make the best possible use of their translation memories. For example, XTM's algorithm has been enhanced to deliver up to 25% improved accuracy, enabling users to leverage more TM matches in segments which differ only by the order of words or proper nouns. Plus, it gives the savings that come from the fact that the fuzzy matching calculation score algorithm was able to retrieve the TM match, as opposed to standard algorithms which would assign too low a score to this example or possibly fail to retrieve it at all.
- **AI-enhanced TM features** – so that fuzzy matches coming from the TM could be directly sent to MT engine, enabling TM and MT to work together to deliver the best match possible. This is particularly useful when the source text could be translated in a number of different ways. It can solve the problem of lacking or inconsistent context in machine translation. This feature is also already available in XTM.

# Chapter 3. Decision-making process

*The TMS market is often confusing and still evolving. That's why the decision to buy a new system or change an existing one is not easy.*

You have decided to purchase a TMS, but are still wondering how to start the whole process. First, you need to outline your needs and goals to be achieved.

To choose the right TMS for your company, you should consider a lot of different aspects, both from business and technical perspectives. To make it easier for you, I strongly encourage you to follow these steps:

1. [Analyzing your translation process \(on page 20\)](#)
2. [Researching the TMS market \(on page 21\)](#)
3. [Budgeting \(on page 22\)](#)



## Note:

The whole process can take even a few months so be prepared to allocate a specific period of time. Don't hurry up - the decision is important and costly! I also recommend to set yourself a go-live date early and try to stick to it.

In the end, what you are looking for is:

- higher team productivity
- more effective collaboration
- faster time to market
- reduced translation costs
- [return on your investment \(on page 22\)](#)

## Analyzing your translation process

*The first step that you need to take is to perform due diligence of the existing translation process at your company.*

These steps will help you get to know what you already have and decide what should change in your [Corporate Language Policy \(on page 15\)](#).

1. Analyze the translation process that runs at your company so far by answering the following questions:
  - a. What content do you usually translate?
  - b. Which file formats are sent for translation?
  - c. Which tools do you use?
  - d. Who manages the whole process: is it centralized or dispersed, operated globally or locally?
  - e. Do you have any TMs or TBs? Where are they stored (internally, at your translation partner's)?
  - f. Do you have a database of translated documents/resources?
  - g. How is translation quality managed?
  - h. Are there any complaints of internal users and if so, what do they concern (e.g. translation is too slow, quality is poor, it costs a lot)?
  - i. How much does the translation cost your company?
  - j. Who do you cooperate with (in-house team, freelancers, agencies)?
  - k. Do you need any connectors to the systems used at your company?
2. Decide if and how this process should change by answering the following questions:
  - a. Who will take care of the new/amended process?
  - b. Does it have to fit in your existing workflows or will you create new ones?
  - c. What budget do you have at your disposal?
  - d. How is the translation process to be aligned with the corporate language policy or business operations (e.g. change to more agile work, more automate processes)?
  - e. What is the company's policy concerning cloud-based tools?

At this stage you should have a document containing the answers to the above questions with recommendation on the further development of the translation process.

## Researching the TMS market

1. Check the key TMS features: decide which are must, nice-to-have or unnecessary ones.
2. Do a TMS shortlist:
  - a. Go through the list of the most popular TMSs. Choose a few and read more about them on their websites.
  - b. Create a Request-for-Proposal listing all your requirements.
  - c. Ask for more information from the respective TMS sales teams.
  - d. Consult case studies from different companies.

- e. Make a comparison of their [features \(on page 24\)](#) and prices in one file.
  - f. Arrange meetings with sales representatives of particular TMS providers.
  - g. Take part in webinars offered by TMS experts.
  - h. Browse through available [documentation \(on page 58\)](#) (user guides, webhelp, videos, etc.).
  - i. Complete your comparison file with new information.
3. Check how a TMS works in practice:
- a. Watch a demo.
  - b. Ask for a free trial of a few selected tools
  - c. Create test projects, [workflows \(on page 30\)](#), user accounts with specific roles ([on page 65](#)).
  - d. Import your [TMs \(on page 73\)](#) (if any) and test them.
  - e. Check those [TMS's features \(on page 24\)](#) that are most relevant to your company. Is it easy to use? Will it be easy for use also by other internal clients?
4. Consult your choice of a TMS with relevant stakeholders (e.g. internal reviewers, marketing team, software developers). Ask about their needs, fears, must-have features and recommendations.
5. Make a final decision on a TMS and prepare an offer for your management, including its:
- a. strengths
  - b. weaknesses
  - c. benefits
  - d. risks
  - e. [costs \(on page 22\)](#)

## Budgeting

*Once considered an additional expense of doing business, translation is now a driver of growth and revenue when done right.*

Most of the available TMSs are cloud-based subscription systems. They are **never free** for corporate use so you need to pay for them based on the number of (concurrent) users or data usage, required features, monthly or annually. It can be difficult to compare pricing plans of different providers, but, ultimately, it is the annual cost that should be budgeted.

It is a must to draft a **business plan** showing the **return on investment (ROI)** to be presented to your management. It should contain all costs to be incurred on a TMS and the translation volume currently processed by your organization. You should also indicate that a TMS automates a lot of tasks, so fewer **manual steps = lower translation costs**.

You can check the official [XTM pricing](#), but it is also a good practice of TMS providers to offer discounts to regular customers or for bigger purchase volume.

Usually, each TMS offer has different plans with available features for various target groups (e.g. small translation teams, bigger [LSPs \(on page 71\)](#), enterprises). If you decide to buy XTM Cloud, you **pay for the number of concurrent users**. Their plan for enterprises includes license bands, which are based on the rate, multiplied by the number of users.

For example, for 10 concurrent users you can spend approx. **€ 6,000** per year plus **€ 3,000** if you need special connectors (e.g. for InDesign files and MT engine).

You need to balance this investment with savings that you have on your translation projects (due to the reuse of previous content from translation memories and discounts offered by vendors), which can be as high as **60%**. Add to that a possibility of using secure machine translation engine (and more savings!), improved quality and faster time to market for your products.

#### Related information

[Introduction to TMS \(on page 5\)](#)

# Chapter 4. Key TMS features

*Every TMS should have certain features you should look for to meet your business needs.*

Before you decide on committing to a particular tool, I encourage you to check the following categories with a brief description and see examples how they are supported in XTM:

- [Project management \(on page 24\)](#)
- [Finance management \(on page 36\)](#)
- [Content management \(on page 39\)](#)
- [Translation editor \(on page 45\)](#)
- [Quality management \(on page 50\)](#)
- [Machine translation \(on page 54\)](#)
- [Connectors \(on page 56\)](#)
- [Security \(on page 57\)](#)
- [Documentation \(on page 58\)](#)
- [Support \(on page 59\)](#)
- [Product development \(on page 61\)](#)



## Note:

The above list is not exhaustive. It contains the key features that you may consult during your [decision-making process \(on page 20\)](#). All in all, these capabilities should provide for a harmonious and versatile system to bring your translation process onto the next level.

## Project management

*Even though the primary goal of a TMS is to automate a lot of tasks in the translation process, it still requires **people** to manage it.*

In addition to linguists, TMSs are also used by **project managers** (both from the client's and vendor's organizations). That's why it should facilitate their work.

Here are some key features relating to project management that each TMS should support:

- [Searcher \(on page 25\)](#)
- [Notifications \(on page 26\)](#)
- [Analytics \(on page 28\)](#)

- [Workflows \(on page 30\)](#)
- [Working outside \(on page 32\)](#)
- [File formats \(on page 44\)](#)
- [Anonymization \(on page 35\)](#)
- [Mobile app \(on page 35\)](#)

These features are not specific only to TMSs, because they are also found in simpler [CAT tools \(on page 7\)](#), but they are important for the smooth translation management process.

## Searcher

*Each TMS is an extensive and comprehensive tool to manage your translatable content. As a result, it is very important that it has a **good searcher** so that you could easily find what you are looking for.*

On one hand you should be able to see only what is relevant for you because **a dashboard is also a project management tool**. XTM offers you different views: you can decide if you wish to view projects by project manager (only your projects or all projects) or status (current, archived or all projects).

On the other hand, you should be able to find a particular project quickly instead of browsing through your huge dashboard. In XTM you can use two different options:

- simple search
- advanced search

**Simple search** allows you to search against the project name, ref. ID, customer name, source language, date created, due date, minimum status, or maximum status. It is also possible to search for multiple projects in one search request. You will see the results on your dashboard.

**Advanced search**, which is available in a separate tab, gives you plenty of filtering options.

Figure 2. Advanced search in XTM

The screenshot shows the XTM software's advanced search interface. At the top, there's a navigation bar with links for Projects, Customers, Users, Tasks, Concordance, TM, Terminology, Configuration, and Xchange. On the far right of the header are icons for user profile, help, and settings. Below the header, there's a toolbar with Project list, Templates, Dashboards, and an Add project button. The main area is titled 'Advanced search' and contains a grid of search criteria. The columns include: Project name, Customers, Payment status, Workflow status; Project ID, Project template, PO number, Linguists employed; Reference ID, Project Manager, Date created, Source language; Creator, Date due, Target languages; Project status, Date completed, LQA; and Overdue. There are also checkboxes for 'Match empty value', 'Show projects with updated due dates', and 'Show projects with updated source files'. At the bottom of the search form are buttons for 'Search', 'Save as Project filter', and 'Reset fields', along with 'Filters' and 'Columns' dropdown menus.

## Notifications

*An intelligent TMS should act as a project manager and communicator between team members, and notify everyone working on it when they have new tasks, and when there is new content ready for translation.*

When everyone can communicate openly over a robust platform that allows you to set up notifications to keep team members on track and to identify their key tasks in the early stages, you'll save time and money by increasing overall efficiency.

An email is considered obsolete in business communication, losing its place as a primary form of contact. All PMs receive hundreds of emails per day so it's easy to get lost in them. Notifications sent from a TMS can be a better solution because you can create a filter in your *Inbox* to categorize your work or you can never lose a valuable piece of information.

XTM sends out emails when certain events happen in the system, particularly in relation to project progress, to different participants. Here are a few examples:

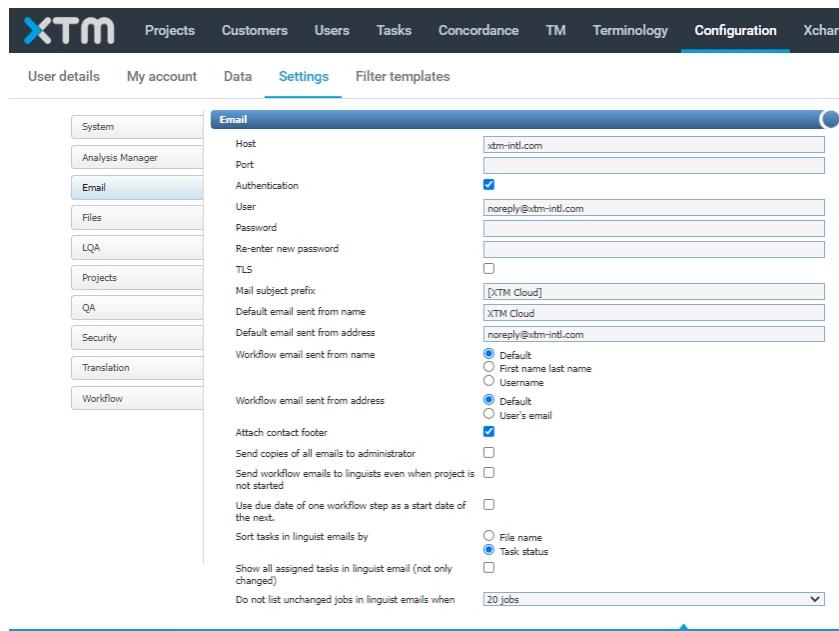
- New project created
- Task finished
- Task re-opened
- Due dates

- Project confirmed
- Subcontracting emails

Emails are not sent to the person making the change.

You can configure the sending of notifications in the system yourself, but the XTM Support team can also carry out advanced customization of XTM emails.

Figure 3. Notification settings in XTM



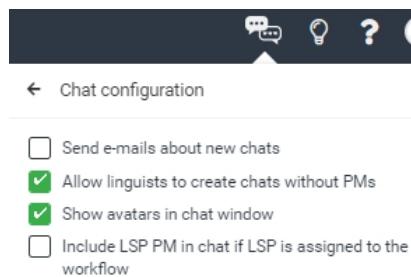
## Chat

It is a nice-to-have feature in a TMS, but certainly not a must-have. It can simplify and accelerate the exchange of information between project members, improving the real-time communication.

In XTM PMs can open chats with all linguists, linguists from a specific language or custom chats with only selected users. Linguists can open chats with the project manager who created the project, with other linguists translating for the same language or with all linguists involved in the project.

It is also possible to customize *Chat* according to your business needs:

Figure 4. Chat feature in XTM



The XTM's chat also allows for sending different files (including images).

## Analytics

*According to The Economist, data is now the most valuable resource in the world, ahead of oil. That is why it should be regarded as the company's biggest asset. The translation process is no different. You should be able to present the management with all kinds of data at any time.*

That's where a TMS proves handy. Since it is a content management system for translation, it provides a variety of data in form of metrics, statistics and reports.

## Metrics

Metrics in a TMS should present all data in a user-friendly way so that all project participants could make relevant decisions e.g. on due dates, costs or linguist allocations. Here is an example of a metrics report generated from XTM:

Figure 5. Metrics in XTM

Project	Ticket xxxx	Target language	All	Date	08-04-2022 11:11	Characters excluding spaces
Initial	Segments	Words	Word %	Characters	Characters %	
Total count		19354	23789	123412	100	118947
Non-translatable		65	97	702	1	677
<b>Translation memory matching</b>						
ICE match		0	0	0	0	0
Leveraged match		15247	15291	62856	51	62812
95-99 Fuzzy match		133	156	1233	1	1212
85-94 Fuzzy match		23	52	507	0	476
75-84 Fuzzy match		199	424	3217	3	2982
Machine translation		0	0	0	0	0
<b>Internal matching</b>						
Repeat		1287	2254	14501	12	13516
95-99 Fuzzy repeat		67	129	832	1	771
85-94 Fuzzy repeat		72	251	1779	1	1613
75-84 Fuzzy repeat		303	831	5508	4	4988
No matching		1958	4304	32277	26	29900
<b>Progress - translate1</b>						
Done		0	0	0	0	0
To be done		19354	23789	123412	100	118947
To be corrected		0	23789	0	0	0

It is important for a TMS to:

- present different data (e.g. number of words and characters)
- outline all possible TM matches (including internal and machine translation as well as non-translatable)
- enable downloading reports in different formats (e.g. xls, csv) or showing them in the interface on a dashboard
- show progress of how much work has been done and is yet to be done

These metrics can be used by a translation vendor to calculate the price for a project or to generate an automatic [purchase order \(on page 37\)](#) to be sent to a vendor for approval. They are also useful to gain an understanding on the workload: how much time is needed for translation to be accomplished and how many linguists should be involved in the job.

## Statistics

The statistics provides information about the quantity of translation actually done by the linguists in each project. In XTM the statistics are divided into the statistics source and statistics target. The data is presented for each linguist, workflow step and file and when there are multiple files in a project as a total for each linguist per workflow step.

A PM can decide when project statistics should be processed (when workflow changes, or once the whole project is finished. It is also possible to download this data as a .csv or .xls file, or present it on a dashboard in XTM.

Figure 6. Statistics in XTM

TARGET						
Initial	Segments	Words	Characters	Characters %	Characters excluding spaces	Translation time [hh:mm:ss]
Total count	105	817	5,765	100%	5,052	00:53:33
Non-translatable	9	18	196	3%	178	00:00:19
Translation memory matching						
Modified ICE match	0	0	0	0%	0	00:00:00
Leveraged match	5	7	38	1%	36	00:06:04
95-99% Fuzzy match	0	0	0	0%	0	00:00:00
85-94% Fuzzy match	0	0	0	0%	0	00:00:00
75-84% Fuzzy match	0	0	0	0%	0	00:00:00

What is worth noting is the *Translation time* feature shown in *Statistics*. It reflects the actual amount of time spent by a linguist on the whole job and on particular matches. A PM can use it as

an indication for TM quality, timeline for similar jobs in future and *edit distance* being a metric for machine translation evaluation used for calculating the price for post-editing.

## Reports

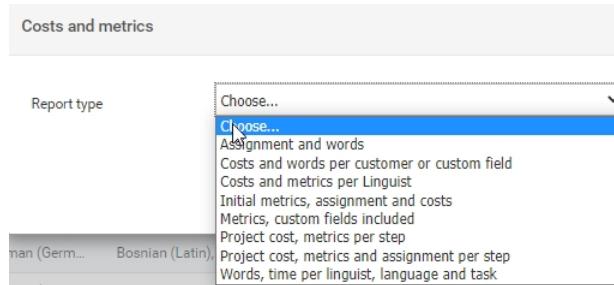
As mentioned above, all data can be presented in a TMS on a dashboard, but it is also very handy to be able to download them in a form of an Excel file (as .xls or .csv format) that you can use for your further reporting purposes.

Here are types of reports that you can generate from XTM:

- Metrics history
- Combined metrics
- Project delivery dates
- Statistics summary
- LQA report
- Costs and metrics

For some of these reports you can also choose the data they are to show (e.g. an example for the *Costs and metrics* report:

Figure 7. Report types in XTM



You can also filter reports by additional attributes such as linguists, steps, dates, languages to be provided with more specific data for your needs.

## Workflows

*One of the main features of a TMS is **work automation**. This is reflected, for example, by workflows which keep all translation stakeholders on the same page. This is where the process is actually managed with full traceability.*

It is very important for a TMS to have **pre-defined workflows** (such as: translate, review, manage, LQA) with a possibility to manage relations between them. In XTM:

- particular steps can be processed at the same time
- the next step cannot be started until the previous step for that bundle is finished
- both steps can be done simultaneously

Some steps are also **automatic** to save on linguists' or PMs' time. These include e.g. approving TM segments or setting a predefined status of XTM segments.

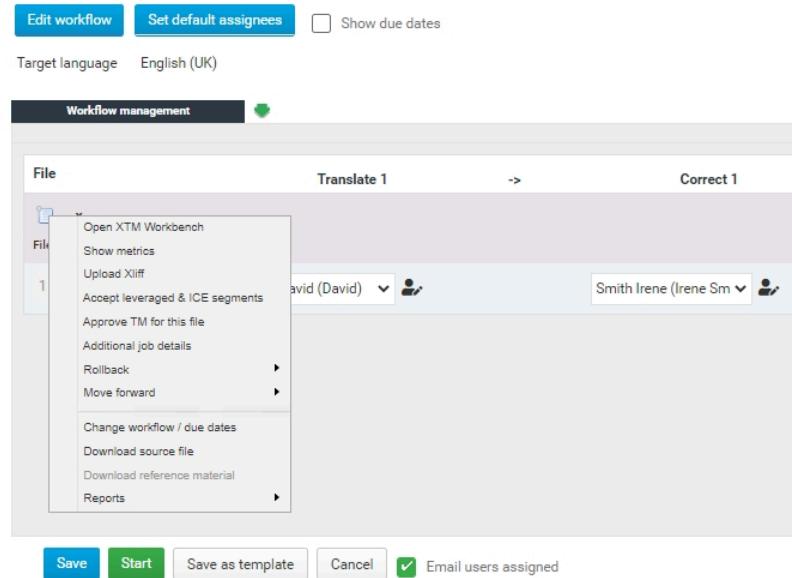
A system administrator can also **create custom steps** depending on business needs.

It is also possible to **split a file into bundles of segments** so that multiple translators can work on the file at the same time, reducing the time needed for the job.

You can manage workflows in XTM also by:

- allocating linguists to a particular step - on the dashboard you can see who is responsible for what and until when
- rolling back the process to a previous step - if you want a linguist to make corrections
- moving the file forward to a subsequent step
- modifying the workflow by adding new or deleting unnecessary steps

Figure 8. Workflow management in XTM



Once you start the process, persons responsible for particular tasks will receive automatic **notifications (on page 26)** from XTM to their email addresses so there is no need for a Project Manager (PM) to send any additional message. PMs also receives emails once a particular step is finished so they can keep an eye on the translation process.

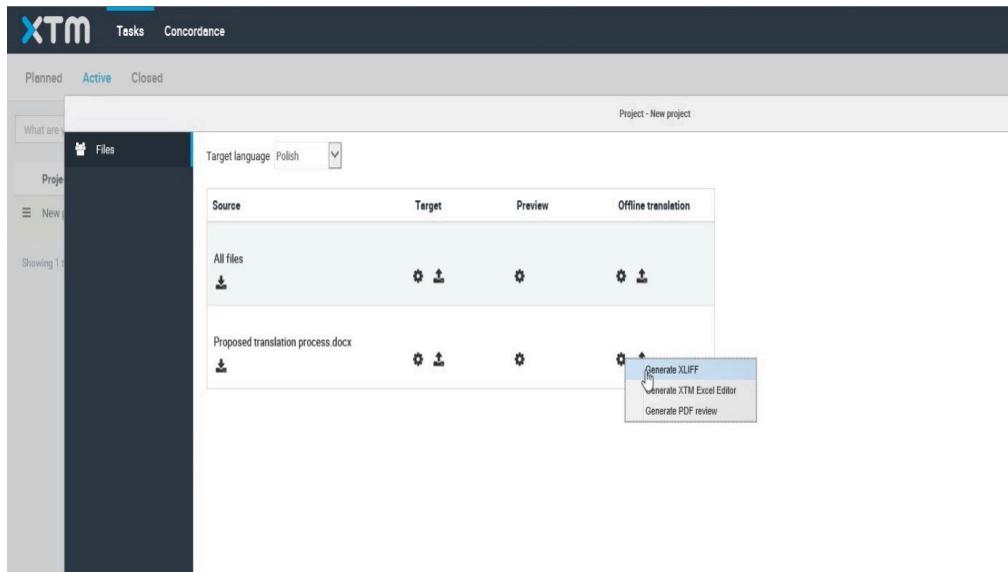
## Working outside

Often TMSs are based on a subscription model in which you pay for the number of concurrent users, i.e. people that use the tool at the same time. As a result, it is good if the TMS offered the possibility for the vendor to work in another CAT tool.

It is possible to work outside a TMS by downloading a package with all language resources. Some translation vendors may not like or be familiar with the TMS that you have bought so this option is also a nice alternative.

XTM offers an opportunity to download an xliff file from the *Offline translation* column.

Figure 9. Working outside in XTM



After translation in another CAT tool, a vendor should import the xliff file back to XTM by clicking *Upload file* in the *Offline translation* column.

The [translation memory \(on page 73\)](#) is updated automatically and it is possible to generate the target file from XTM.

## File formats

You need to know what file formats are usually sent for translation in your company so that you could decide which TMS to choose.

It is best to decide on the one that processes not only those but also similar formats to cater for future developments.

It is also good if a TMS supports the original file formats that you use so as to reduce the risks of files corrupting after being converted to a replacement format.

For example: if your company translates a lot of indd files, look for a TMS that processes indd files directly instead of idml files, because after conversion of indd files to idml format you may have the layout distorted or links to images broken, which will result in a lot of additional unnecessary work by a graphic designer.

In case of an IT company, it is extremely important that a TMS supports such **native formats** as .xml, .xliff or .po so as [not to translate using an Excel sheet](#).

XTM supports the following **file formats** for translation:

- Adobe FrameMaker (mif)
- Adobe Illustrator (fxg, svg, ai,)
- Adobe InDesign (idml, indd, indb)
- Adobe Photoshop (psd)
- Android apps (xml)
- asp, aspx, ascx
- Digia QT (ts)
- DITA
- Document template (tpl)
- eps
- html, htm XHTML, xht shtml, shtm
- ini
- iOS apps (strings, stringsdict)
- Java property files
- JSON
- MadCap Flare (flprj)
- Markdown (md)
- MemoQ (mqxliff)
- Microsoft Office (doc, docx, xls, xlsx, xlsm, ppt, pptx,)
- Microsoft Visio
- Open Office (sxw, odt, ods, odp)
- PDF (converts PDF file to Word)
- php
- po, pot
- rc
- resx, resw

- rtf
- SalesForce (stf)
- sdf
- Sketch files (.sketch)
- SubRip text (srt)
- Trados (ttx)
- Trados Studio (sdlxliff)
- txt
- vdx, vsdx
- Wordfast (txml)
- xlf, xliff
- xml
- yml, yaml

Some TMSs require a filter to be able to process a particular file format that is either embedded or similar to the native one. For example, if you want to translate a Markdown file in memoQ, which is not supported there, you need to apply a plain text filter. As a result, special Markdown tags will still appear in the Editor and if used improperly by a translator, can result in more work to bring it back to the original format. XTM processes .md files without a filter so you can save your time and effort for more productive tasks.

Figure 10. Sample Markdown file in XTM Workbench

No	Source	Target
16	Aplikacja ta wciąż się rozwija, więc jej użytkownikom nuda nie grozi.	
17	Dla kogo jest ten podręcznik?	
18	Jeśli jesteś <b>{1}</b> kolarzem <b>{1}</b> , dopiero co kupiłeś swój pierwszy <b>{2}</b> trenażer interaktywny <b>{2}</b> , coś słyszałeś o <b>{3}</b> Zwiftie <b>{3}</b> , ale nie za bardzo wiesz, co z czym i jak, to ten krótki podręcznik użytkownika jest właśnie dla Ciebie.	
19	O ile w internecie można znaleźć sporo informacji na temat Zwifta w języku angielskim, brakuje ich w języku polskim.	
20	Ponadto są one dostępne w bardzo wielu miejscach, do których trudno szybko dotrzeć.	
21	Ten podręcznik instruuje, jak zacząć używać Zwifta, żeby się od razu nie zniechęcić.	
22	Zawiera solidną dawkę wiedzy w pigułce i linki do bardziej szczegółowych informacji.	

**Matches (0)** **Concordance** **QA**

✓

## Anonymization

*To comply with the [GDPR](#), companies are required to anonymize clients' TM content, essentially remove personal data.*

One of the features ensuring data protection is *anonymization* (also called *pseudonymization*).

In XTM the anonymization feature is based on Named Entity Recognition (NER). Its purpose is to protect private or personally identifiable data. It identifies confidential data by converting it to inline tags, while still maintaining the integrity of the data itself.

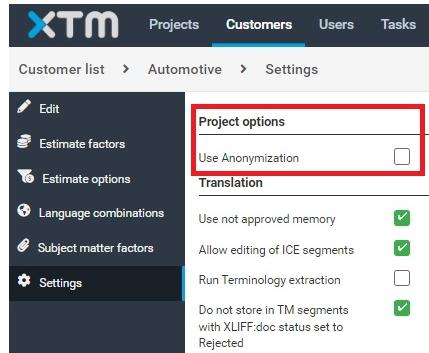
As a result, there is no risk of a data leak, whether the text is translated by a human translator or through machine translation.

To convert sensitive data into inline tags during translation in XTM Workbench, you need to use special MS Word styles.

This feature is available for all languages, while anonymization applies only to the following languages: Danish, Dutch, English, French, German, Italian, Portuguese, Spanish, Swedish.

Once the translation process is complete, and the target document is finalized, the sensitive data is automatically reinserted into the text.

Figure 11. Anonymization in XTM



## Mobile version

*The world goes mobile, so do TMSs.*

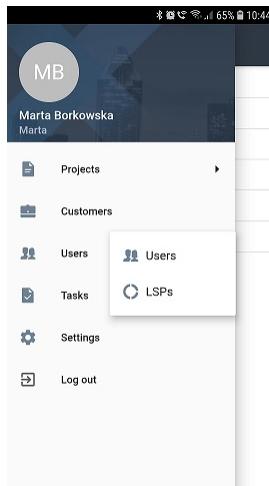
Today's world requires you to be on the go all the time. On one hand, you expect work-life balance, but on the other wish to manage translations on your phone or tablet using a mobile app; around the clock. It does not mean you have to do it, but it is good if you have such an opportunity.

The **XTM Mobile** enables project managers to oversee projects on the go. You can focus on critical issues such as:

- managing projects
- applying smart filters
- accessing metrics
- managing [LSPs \(on page 71\)](#)

The app also offers some unique features such as calling or sending a text message to customers, users, or LSPs directly. It is easy to use and has very ascetic looks:

Figure 12. XTM Mobile app



## Finance management

*The main reason for investing in a TMS is to reduce costs that your organization spends on translation in general. See how can this tool help you achieve it.*

It is best if you have all the translation costs under control. However, only a few TMSs have incorporated this important business management function, XTM being one of them.

In the translation industry pricing strategies are very diverse. You can be charged per characters, words, lines, both source and target. It is good practice to agree upon one model with all of your vendors and apply it in your TMS.

XTM has two main features that you can use to manage your translation-related finances:

- [rate cards \(on page 37\)](#)
- [purchase orders \(on page 37\)](#)

If you decide to use them, the whole process will be quick (no need to wait for a quotation from your translation vendor) and transparent (you will know how much you will pay in advance).

## Rate cards

*Rate cards make it easy to estimate costs, calculate a project's budget or choose the most cost-effective language vendor.*

They are available for all XTM users from the *Users* tab and are easily customizable.

All you need is to enter a language combination and get the following information from your vendors:

- language pairs
- base rate, e.g. € 0.10
- percentage rates for different categories of [matches \(on page 70\)](#) (repetitions, [MT \(on page 71\)](#) matches, etc.)

Here is a sample rate card for a translator:

Figure 13. Sample rate card in XTM

Edit rate card for Marta Borkowska		
No matching	100	%
ICE match	10	%
Leveraged match	20	%
Fuzzy match		
95-99% Fuzzy match	20	%
85-94% Fuzzy match	50	%
75-84% Fuzzy match	50	%
95-99% Fuzzy repeat match	20	%
85-94% Fuzzy repeat match	50	%
75-84% Fuzzy repeat match	100	%
Machine Translation	70	%
Non-translatable	0	%
Repeat	20	%

Based on this data, XTM generates a [purchase order \(on page 37\)](#) automatically for a translation project as a .pdf file, which you can send to your vendor for approval. This automates the process and considerably shortens the translation turnaround time, because the quotation process can be very time consuming. In addition, you know exactly how much you will pay. Of course, it works well if you gather all this data well in advance, e.g. from the Cooperation Agreement signed with your vendor.

## Purchase orders

*A Purchase Order is the specification of costs that your vendors (e.g. translators, LSPs) will charge you.*

You can generate it easily before your vendors start working on the project. Based on the data entered in [rate cards \(on page 37\)](#), you can generate a Purchase Order (PO) easily for every translation project created in XTM and assigned to a linguist or an [LSP \(on page 71\)](#).

You only need to go to *Project Editor > Estimates* and click on *Generate*.

Figure 14. How to generate PO in XTM

You can generate costs based on: metrics, current metrics, statistics source or statistics target. In *Data > Estimates > PO settings* you can choose e.g. a calculation method (subtraction/addition) and other features that should be included in the file and work best for you.

A Purchase Order is a .pdf or .xls file showing all the metrics and the final price you will pay for this translation. You can also generate a *Custom PO* if needed, where the costs can be broken down into particular language pairs and workflow steps.

Figure 15. Sample Purchase Order from XTM

PURCHASE ORDER		
Vendor Language Service Providers details	From Your company's details	
PO number: DEEL	Reference ID:	EUR
PO date: 04-04-2022 15:12	Project ID:	Other
Project due date: 11-04-2022	Subject matter:	Translate 1
Project Manager: Project Managers details	Task:	
PM email: Borkowska Marta	Source language:	German (Germany)
Project name: Translation project	Target languages:	Romanian
Cost type	Quantity	Amount €
Generated from Metrics		116.48
Management fee		0.00
Fixed price		0.00
Minimum price padding		0.00
	Total:	€116.48
Words	Quantity - Words	Amount €
No matching	3780	262.50
Machine Translation	0	0.00
75-84% Fuzzy match	274	-8.69
85-93% Fuzzy match	221	-1.10
95-99% Fuzzy match	341	-19.10
75-84% Fuzzy repeat match	15	0.00
85-93% Fuzzy repeat match	61	-0.41
95-99% Fuzzy repeat match	0	0.00
Repeat		0.00
Non-translatable	119	-0.41
Leveraged	1058	-59.81
ICE	273	-38.34
	Subtotal:	€116.48
Comments:		

You can send this file to your vendor by email or request that XTM does it for you directly using feature *Email PO to Linguist*.

XTM also gives you an opportunity to enter your own cost settings, exchange rates and proposal factors to make finance management for translation projects easy.



**Note:**

If you work for an LSP, you could benefit from the fact that the *Estimates* tab where all costs are generated, is divided into 2 sections: *Proposal* and *Costs*. Depending on your XTM configuration, one of them can be used to show how much you will charge your customer. As a result, you can generate two POs: one for your vendor and one for your customer.

## Content management

A TMS maintains all the translation-related content centrally to be accessed in real time.

This process is much more streamlined in comparison to offline CAT tools.

Here are some useful features to help you manage your corporate linguistic resources:

- [Alignment \(on page 39\)](#)
- [Terminology extraction \(on page 41\)](#)
- [TM management \(on page 41\)](#)
- [Termbases \(on page 42\)](#)
- [Concordance \(on page 43\)](#)
- [Language variants \(on page 44\)](#)

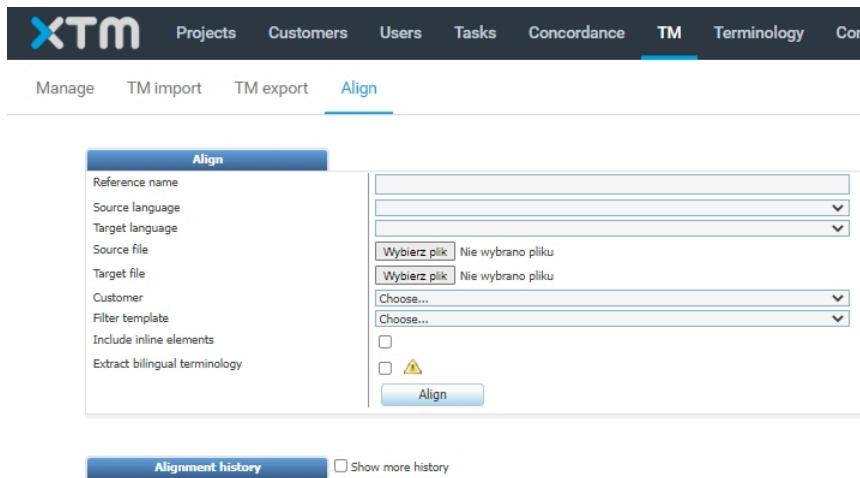
## Alignment

While alignment is a feature shared with a lot of CAT tools, its use can vary from very difficult to extremely easy so you should choose your TMS carefully.

The alignment tool matches the source and target language files side-by-side to determine which pairs belong together. The result is a parallel text (*bitext*).

You use it if you have the translated versions of your documents, but the translation wasn't performed in a CAT tool so you don't have a translation memory. Now these documents need to be updated or changed across the languages and you want to retain the existing content, style and terminology. In addition, you wish to reduce costs, because there are a lot of repetitions and matches.

Figure 16. Alignment in XTM



TMSs are of great help here because this is a built-in feature. All you have to do is go to *TM > Align*, upload two documents (in source and target languages), run the alignment and analyze the results. In XTM you get an Excel file with texts in two columns and a probability score.

Figure 17. Result of XTM alignment

Src Seg.	de_DE					en_GB					Tgt Seg.	Probability
	Unmatched	Not sure	Merged	Good	Very good	Same						
0	Datenschutz-Informationen			Data Privacy Protection			0	1,0000				
5	Sie enthält die Informationen nach Art. 13 und 14 DSGVO.			It contains the information described in Art. 13 and 14 GDPR.			5*	1,0000				
6	1. Begriffe			1. Terms			6*	1,0000				
7	Die Verarbeitung von personenbezogenen Daten erfolgt im Rahmen der gesetzlichen Bestimmungen.			The processing of personal data takes place within the guidelines of legal regulations.			7	1,0000				
8	Der Begriff "Personenbezogene Daten" bezeichnet dabei alle Informationen, die sich auf eine identifizierte oder identifizierbare natürliche Person beziehen. "Verarbeiten" umfasst jeden mit oder ohne Hilfe automatisierter Verfahren ausgeführten Vorgang oder jede solche Vorgangsreihe im Zusammenhang mit personenbezogenen Daten wie das Erheben, das Erfassen, die Organisation, das Ordnen, die Speicherung, die Anpassung oder Veränderung, das Auslesen, das Abfragen, die Verwendung, die Offenlegung durch Übermittlung, Verbreitung oder eine andere Form der Bereitstellung, den Abgleich oder die Verknüpfung, die Einschränkung, das Löschen oder die Vernichtung.			The Term "personal data" refers to all information relating to an identified or identifiable natural person. "Processing" means any operation or set of operation which is performed on personal data whether or not by automated means such as collection, recording, organization, arrangement, storage, adaptation or alteration, retrieval, consultation, use, disclosure by transmission, dissemination or otherwise making available, alignment or association, qualification, erasure or destruction.			8*	1,0000				

You need to check it thoroughly and, if everything is done, upload the file in the *TM import* tab. Then, the translation memory is updated automatically.

XTM *Align* creates two Excel spreadsheets for each alignment: one with 90+ probability of accurate alignment (quick check and upload) and the other with all texts.

The only disadvantage is that the *Align* feature in XTM is shared with all of the customers on the cloud so sometimes it takes a long time for the file to be returned. It also takes longer if you build a dictionary for a new language pair.



**Note:**

In XTM the *Align* feature is only available for the enterprise account (it is not available for freelance or group accounts).

## Terminology extraction

*Computer-aided terminology extraction proves useful when you need to search for customer-specific vocabulary.*

Terminology plays a very important role in many different fields with translation and localization being only some of them. Many sectors use wording that is only typical for them, while some customers may opt for their preferred terms. Researching them is a time-consuming task.

There are many CAT tools in the market that enable such feature so it is certain that TMSs must follow. After terms are extracted, i.e. a bilingual list of candidate terms is created, it should still be verified by a human terminologist or translator.

In XTM this feature is based on the [Alignment \(on page 39\)](#) so it is also available only to enterprise accounts and the output is an Excel file.. It utilizes Big Data, AI, and advances in computational linguistic technology including [Inter-language vector space](#). The feature already works for 50 languages helping customers save up to 80 percent of time on glossary creation.

For more information on terminology extraction, you should visit [TermCoord](#) or [Nimdzi](#).

## Translation memories

*TMs are the most important of all translation resources so it's important to choose a TMS that has the most options to manage them easily.*

XTM has integrated [Translation Memory \(on page 73\)](#) and [Terminology \(on page 42\)](#) modules to allow creating, maintaining, and updating translation memories and termbases. All sets of TM assigned to a project are **updated in real time** as the translators move from segment to segment. Any changes made to the TM are immediately updated and accessible to all users with appropriate roles and access rights.



**Note:**

It is a huge advantage of a TMS that TMs do not have to be sent by email or any other file transfer, but are stored and updated centrally on the server.

The translation memory is assigned to the customer and a language pair. You can edit it both in a dedicated *TM Manage* tab or directly in *Workbench* for a particular segment.

Figure 18. TM management in XTM

The screenshot shows the XTM software interface for TM management. At the top, there's a navigation bar with tabs: Projects, Customers, Users, Tasks, Concordance, TM (which is highlighted), Terminology, Configuration, and Xchange. Below the navigation bar, there's a toolbar with buttons for Manage, TM import, TM export, and Align. On the left, there are filter dropdowns for Account (My account), Customer (All), Source language (German (Germany)), Target language (English (UK)), and Project (All). To the right of these filters are search and replace fields: Database ID, Status (Choose...), XLIFF/doc status (Choose...), Search creation date (checkbox), Search phrase (diversity), Replace with (checkbox), and Match options (Phrase match, Exact match, Use stemming, Case sensitive). Below these controls are buttons for Search, Replace, Next, Replace/Next, Replace all, and Delete all. The main area displays a table titled "Memory segments found: 403". The table has columns for ID, German (Germany) (containing the source text), English (UK) (containing the target text), and Status (with icons for Not approved, Approved, and Pending). The English column contains some descriptive text about diversity. At the bottom of the table, there are pagination links: < 1-10 11-20 21-30 31-40 41-50 51-60 > 1-50.

Memory segments found: 403			
ID	German (Germany)	English (UK)	Status
1807924	Profitieren auch Sie von der größten System- und Dekorvielfalt der Branche und nutzen Sie unser Spektrum aus Oberflächen, Kanten, Sockeln, Wandanschlüssen, Akustiklösungen, Rollladen- und Terrassensystemen.	Don't miss out on the opportunity to experience the largest system and decorative design <b>diversity</b> in the sector, use our range of surfaces, edgebands, plinths, wall seals, acoustic solutions, tambour doors and decking systems.	<span>Not approved</span>
2533909	Komplexität und Variantenvielfalt	Complexity and variant <b>diversity</b>	<span>Not approved</span>
2572814	Kontrollierte Vielfalt	Controlled <b>diversity</b>	<span>Not approved</span>
2668563	Designvielfalt	Design <b>diversity</b>	<span>Approved</span>
3016259	Ob auf Möbelmessen oder im Küchenstudio: Vielfalt in Farbe und Oberflächengestaltung ist aus den Angeboten nicht mehr wegzudenken.	Whether it is at furniture trade fairs or in the kitchen showrooms: it is difficult to imagine product ranges without the <b>diversity</b> of colours and surface designs.	<span>Approved</span>
3016264	Mit dieser wachsenden Vielfalt steigen auch die Anforderungen an Kantanbänder.	The demands on edgebands increase in line with the growing <b>diversity</b> .	<span>Approved</span>
3027768	Die bedruckten Folien erlauben eine große Farb- und Mustervielfalt, auch die aktuell angesagte Hochglanzoptik ist möglich.	The printed foil permits a large colour and pattern <b>diversity</b> ; the currently popular high-gloss finish is possible as well.	<span>Not approved</span>
3176324	Profitieren Sie von der größten System- und Dekorvielfalt der Branche und <b>(1)</b> nutzen Sie unsere Erfahrung im Innenausbau für Ihren Unternehmenserfolg.	Benefit from the largest system and decorative design <b>diversity</b> in the sector <b>(1)</b> and take advantage of our experience in interior design to help your company succeed.	<span>Approved</span>

The TM management system enables you to:

- manage your translation resources (edit, approve, delete, search, find and replace)
- import a new TM
- export selected TMs in a relevant format

Translation memories can be imported into XTM from:

- TMX
- XLS
- single-language XLIFF file

## Termbases

Using a termbase is an excellent solution for terminology management. TMSs should have relevant features to make your work easier and quicker.

While [TMs \(on page 73\)](#) are automatically created in a TMS, [TBs \(on page 73\)](#) need to be prepared manually. It is possible to use [terminology extraction \(on page 41\)](#) to help this process, but it still requires a human factor.

XTM incorporates a comprehensive *Terminology* module, i.e. a database of multilingual terms.

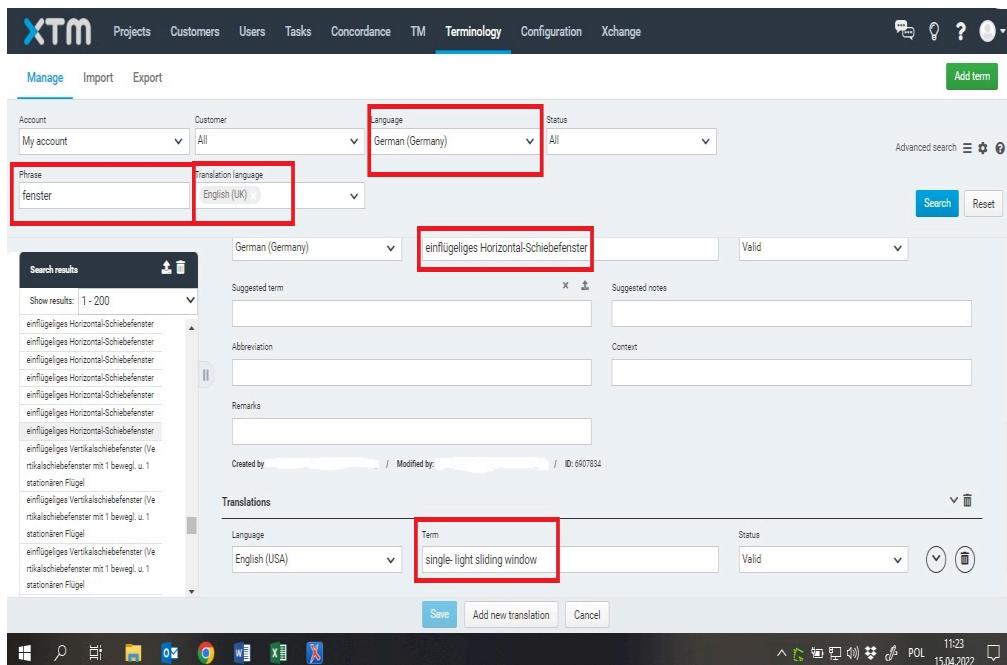
In XTM *Workbench*, the system identifies and highlights terms in the source text that are in the termbase. The approved term equivalent in the target language is displayed in the docked panel. If you hover on it, you can see more term details. This feature facilitates a consistent use of the agreed terminology during translation.

In XTM you can:

- manage terminology (add, suggest, edit, delete, add images)
- export any termbase from XTM to several standard file formats
- import a list of existing terms into XTM from external sources, and then edit or add new terms directly from the XTM *Workbench* or in the *Manage* tab.

Here is what a termbase looks like in XTM:

Figure 19. Termbase in XTM



## Concordance

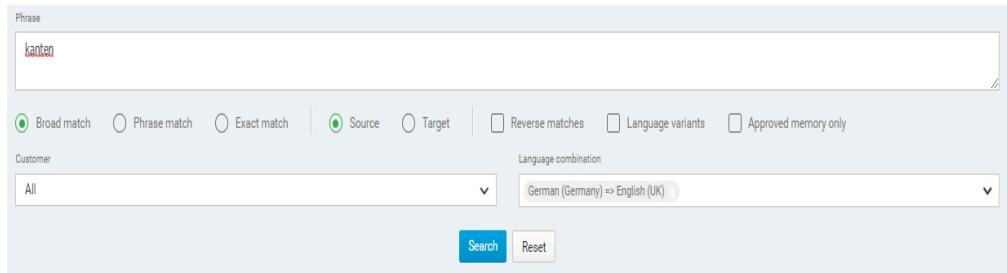
*Context is the king in translation. Here is how Concordance helps linguists make the most of translation resources in XTM.*

Concordance is a feature intrinsic to CAT tools and TMSs. It involves searching all over a particular TM for translation of particular expression or phrase where there is no TM match (or where the match

is below a pre-determined threshold, e.g. 75%, to be displayed) or the translator wants to learn more about the context.

In XTM you can run concordance search for all translation memories both from a dedicated panel (*Concordance* in top menu) and in *Workbench* when translating a document.

Figure 20. Concordance in XTM



It is also good to check if the TMS you wish to buy enables search as broad, phrase or exact match, in both source and target segments, reverse matches (e.g. DE>EN and EN>DE translation memories) and for [language variants \(on page 44\)](#). As a result, you will be able to access all the language resources that you have collected for your company quickly and easily.

## Language variants

*Some languages have variants that you want to preserve in separate translation memories. However, a problem appears if you want to leverage on cost reductions due to a high number of matches from a TM (on page 73) with a different language variant.*

XTM gives you the option to benefit from TMs of other language variants for Arabic, English, French, German, Italian, Portuguese and Spanish. If you choose it and are translating English to Spanish (en-GB to sp-SP), XTM will firstly match against the TM of English en-GB to Spanish sp-SP and then check all the other variants of English, such as en-US or en-AU, and Spanish, such as sp-MX or sp-CL TM to find a match.

As a result, you can pay considerably less if matches are found from another language variant TM.

Figure 21. Language variants in XTM

The screenshot shows the 'Settings' tab in the XTM interface. On the left is a sidebar with links like System, Analysis Manager, Email, Files, LQA, Projects, QA, Security, and Translation. The main area has tabs for TM, Workflow and access, Metrics, Machine translation, Terminology, Segment filters, and Offline Editors. Under 'TM', the 'Matches - general' section is selected. It contains several checkboxes with columns for 'Permit' and 'Default setting'. One row, 'Match against all language variants', is highlighted with a red box and includes checkboxes for Arabic, English, French, German, Italian, Portuguese, Spanish, and Dutch. Below this row are other options: 'TM language variant penalty profile' (unchecked), 'Highlight segments populated with a language variant match' (unchecked), and 'Mark segments as locked when' (unchecked).

You can also set a TM language variant penalty profile and highlight segments populated with a language variant match.

## Translation editor (Workbench)

*Currently, hardly anyone translates in an original document, be it Word, HTML file or InDesign. Most translators and reviewers work in **special text editors** that are core CAT tool components.*

As a result, they do not need any other special tools (e.g. code editors for html) or even software licenses (e.g. for InDesign) to translate a special file. It is possible to work with any file format on a plain text.

Such editors can be available as **desktop** or **cloud** versions. However, most TMSs will have both options with the latter one set as default. Therefore, translators need stable internet connection to be able to work in it, which can still be a nuisance for them. However, thanks to the integration with translation memories, termbases and machine translation engines, linguists can speed up the translation process.

You should also remember that not only linguists use the translation editor interface in a TMS. As a result, its features should meet the needs also of project managers doing the last check before delivering the file to the client.

Here are some aspects that you should pay special attention to when choosing your TMS:

- [Inline tags \(on page 46\)](#)
- [Preview \(on page 46\)](#)
- [Filtering \(on page 48\)](#)
- [Offline editor \(on page 49\)](#)

## Inline tags

*Inline tags (on page 71)* are a very important part of the whole translation process.

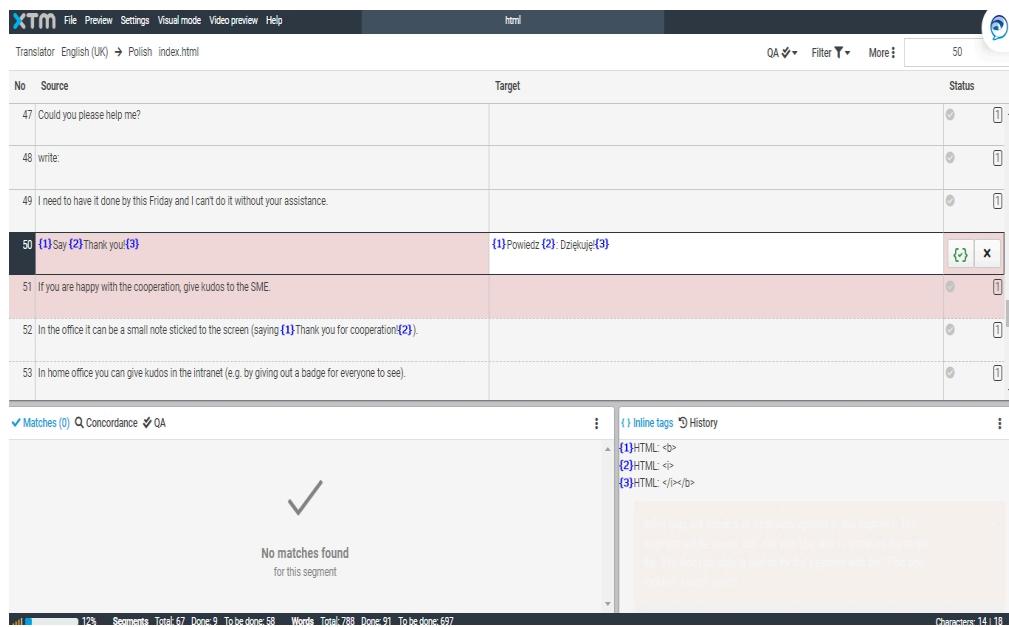
They need to be placed correctly so that the final text has the correct layout. In addition, it is a must to place them in the target segment so that the TM could be updated and the file be exported from the TMS. That's why, usually, the tag placement in the target segment should be as in the original.

Inline tags can be displayed in CAT tool text editors in a different way (e.g. in XTM Workbench as numbers in curly brackets). They are an indispensable part of work now, but can still cause a lot of frustration and make the translation work extremely tedious both for linguists and project managers.

For more information on why they are so important, you can consult the [Idioma blog](#).

That's why it is essential to choose a TMS that **helps automate dealing with inline tags**. XTM offers the option of auto-inserting tags in *Workbench*. Whenever they are missing or are incorrectly inserted, you can have them fixed automatically. The system will propose the inline tags which should be entered into the target segment and you may accept them or reject them and insert your own.

Figure 22. Inline tags correction in XTM



## Preview

The aim of the visual mode in TMSs is to show you a preview of the source and target file so that linguists could click on the text in the preview and enter or correct a translation in the target segment.

The target preview is immediately updated with the translation which allows you to see the full context of your translation as you are working on it.

Not only does it provide translators and reviewers with much expected visualized context, but also shows places where texts are too long and need to be shortened to be visible. It also saves time of post-processing work e.g. of graphic designers.

In XTM you can see the live preview of the following files:

- HTML
- XML
- PDF (only editable)
- Word
- InDesign (only with an InDesign server enabled which is an additionally paid service)
- SRT (to see video subtitles in context)

With a real-time preview of translations, you can also eliminate errors and omissions. Certainly, project managers will receive fewer questions from linguists lacking context. In addition, if translators know the final result of their work already while doing it, they will have greater satisfaction with it.

Figure 23. HTML file preview in XTM

No	Source	Target	Status
10	You can still find important data on the web that you can later use to approach an SME from a different perspective.	Wciąż możesz znaleźć w sieci informacje, dzięki którym później podejdziesz do SME z innej perspektywy.	<span style="color: green;">✓</span>
11	At the same time, ask your SME and their colleagues what kind of person they are. Find out as much as possible about what they like or dislike privately and what style of work they prefer.	Simultaneously, ask your SME and their colleagues what kind of person they are. Find out as much as possible about what they like or dislike privately and what style of work they prefer.	<span style="color: orange;">⚠</span>
12	Find out as much as possible about what they like or dislike privately and what style of work they prefer.		<span style="color: grey;">∅</span>

Figure 24. Interactive pdf preview for indd files in XTM



## Filtering

*You choose a TMS for time and cost savings so one way to make you and your linguists work faster is to use **filters** in the text editor.*

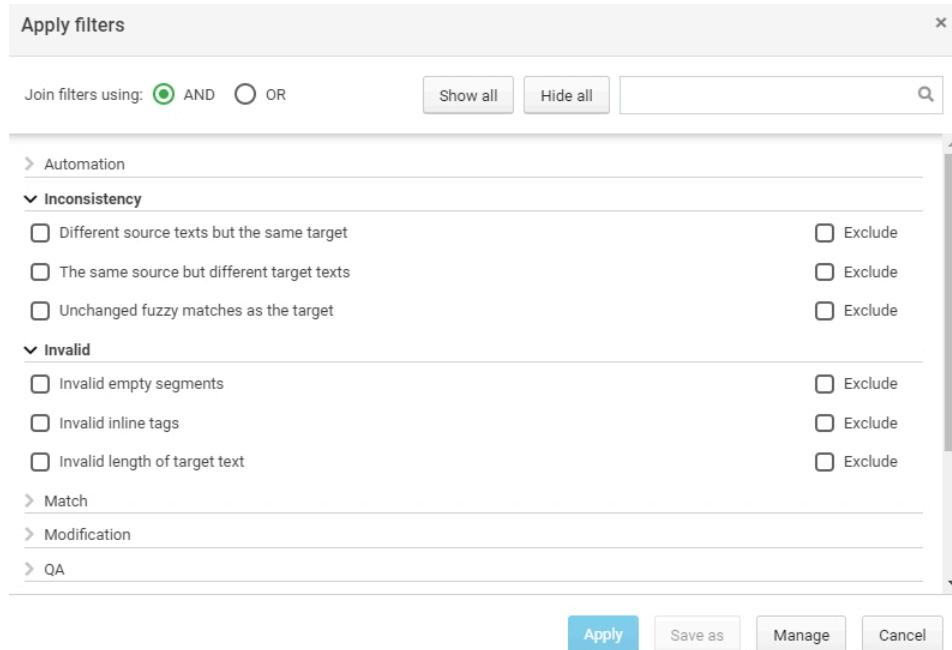
Filtering speeds up both the translation and review process, and makes the terminology more coherent. By using it, linguists can focus on specific segments, especially in case of bigger files.

It is also very important to have **quick access to filters**. In XTM you can use them directly from the top menu in Workbench. In addition, you can quickly set up your **favourite filters** and you will see the ones you used last. As an additional feature you can create **advanced, customized filters** by joining two or more segment filters together.

Each linguist and PM should be able to see **filters grouped in categories** such as: status, invalid, modification, match, inconsistency and **exclude** them from being displayed.

Here are some of available filters in XTM:

Figure 25. Some filters available in XTM



Filters are a great way to save on costs, e.g. if you pay hourly rates, your linguists spend less time on browsing through huge files. You can also send only new and modified texts for translation by filtering out all 100% and 101% matches so you will pay much less. This is extremely useful in the case of files with a lot of reused content for which you still pay for matches.

## Offline editor

*Sometimes you know you will not have internet access (rare cases nowadays but it can still happen if you are able to work from anywhere) and you would like to have your job done.*

This is where an offline editor proves handy, especially if you do not have any other desktop CAT tool on your laptop.

The **XTM Offline Editor** is a self-contained application that allows you to translate, correct and review offline. The only software that you need to install is a compatible version of *Microsoft Excel*. It works in a similar manner to the online, browser-based version of XTM Workbench.

Figure 26. Offline Editor in XTM

		ID	German (Germany)	Polish	Status
2020,1	Project: 900600	File: 900600_DE_02-2022_4tr.indd	Segments: 1-2492	Role: Translator	
1714	{1}Die Nadeln sind zu Magazinen mit je 30 Nadeln {2}thermisch verschweißt.	{1}Szpilki są zgrzane termicznie w magazynki liczące sobie po {2}30 sztuk.	M		
1715	Dadurch entfallen mögliche Beeinträchtigungen des Setzvorgangs durch Verklebung mit Resten des Fixierbandes.	Możliwość nieprawidłowego wbijania szpilek w wyniku sklejenia reszkami taśmy mocującej jest dzięki temu wykluczona.	I		
1716	RAUTAC-Tackernadeln	Szpilki Tacker RAUTAC	M		
1717	RAUTAC-Tackernadel (Farbe: grau)	Szpilka Tacker RAUTAC (kolor: szary)	M		
1718	Verwendbare Rohre	Stosowane rodzaje rur	M		
1719	FASTLOC PEX 16 x 2,0 mm	FASTLOC PEX 16 x 2,0 mm	M		
1720	FASTLOC ML 16 x 2,0 mm	FASTLOC ML 16 x 2,0	M		
1721	Beschreibung	Opis systemu	M		
1722	Die RAUTAC-Tackernadeln garantieren durch ihre speziell ausgebildeten Haltespitzen eine aufschwimmsichere Fixierung der Rohre.	Szpilki Tacker RAUTAC dzięki specjalnie ukształtowanym końcówkom mocującym wykluczają możliwość poślizgu rur i zapewniają ich pewne mocowanie.	M		
		Terminology			
		Garantie			
		Rohr			
		Rohre			
		Fuzzy match (99%)			
		Source:			
		Die RAUTAC-Tackernadeln garantieren durch ihre speziell ausgebildeten Haltespitzen eine aufschwimmsichere Fixierung der Rohre.			
		Fuzzy Source:			
		Die RAUTAC-Tackernadeln garantieren durch ihre speziell ausgebildeten Haltespitzen eine aufschwimmsichere Fixierung der Rohre.			
		Fuzzy match (95%)			
		Source:			
		Die RAUTAC-Tackernadeln garantieren durch ihre speziell ausgebildeten Haltespitzen eine aufschwimmsichere Fixierung der Rohre.			
		Fuzzy Source:			
		Die Tackernadeln garantieren durch ihre speziell ausgebildeten Haltespitzen eine			

## Quality management

*There are still discussions on what should be considered a high-quality translation. Is it an error-free document in the target language or the smooth process where every step complies with the established procedure?*

Many linguists agree that it is when the translated document meets or exceeds the expectations of the client and the target audience. Although, it is very difficult to measure linguistic quality, everyone keeps talking about it, especially when they regard it as "poor".

And that's the point: quality can be both a subjective and objective notion. What Project Managers can do is to focus on the former aspect. One of the reasons for buying the TMS is improving the quality of translations and quality of the whole process.

Here are key features that help manage and improve the quality of translations:

- [Quality Assurance \(QA\) \(on page 51\)](#)
- [Linguistic Quality Assurance \(LQA\) \(on page 52\)](#)

## Automatic QA

*Automatic QA tools to check translations have become the norm in the translation industry. Many of them are built-in with the various CAT tools, but some are also available separately.*

The aim is to help linguists and Project Managers spot as many errors in the translated documents as possible quickly and effectively.

After translation and proofreading Project Managers usually perform an automatic Quality Assurance check e.g. for:

- formatting
- punctuation
- grammar
- spelling
- inline tags
- forbidden or rejected terms used

In XTM, the scope of QA checks depends on the connected spell checker and its availability for the particular language. You run it directly in Workbench, using either a built-in solution or the connect to the one provided by MS Word. It is also possible to perform QA using [Xbench](#) – a third-party translation QA and terminology management tool.

As a result, when a QA error is detected, it is highlighted and you will see warnings displayed with segment number, category and description. You can also filter our segments with QA warnings to focus only on them.

Figure 27. QA feature in XTM

No	Source	Target	Status
	perspective.	perspektywy.	<span style="color: green;">✓</span> MT
15	First, always try to invite them for a coffee (or so, even online) or Playstation (when in the office) before getting down to more serious stuff.	Po pierwsze, zaproś ich na kawę (lub coś w tym stylu, nawet przez Internet) lub grę na Playstation (w biurze), zanim przejdiesz do poważniejszych spraw.	<span style="color: green;">✓</span> MT
50	{1} Say {2} Thank you{3}	{1} Powiedz {2} Dziękuję {3}	<span style="color: green;">✓</span> M
52	In the office it can be a small note sticked to the screen (saying {1}Thank you for cooperation{2}).	W biurze może to być mała karteczka przyklejona do ekranu (o treści: {1}Dziękuję za współpracę{2}).	<span style="color: green;">✓</span> MT
65	I don't like seeing tons of blinking messages when my status is {1}in a meeting{2} or being asked	Nie lubię widzieć dziesiątek miniących komunikatów, gdy moja status to {1}na spotkaniu{2}, lub gdy	<span style="color: grey;">○</span> MT

Matches (1) QA Concordance QA

Segment	Warning	Issue
2	Spelling	Spelling error: SME
6	Spelling	Spelling error: Technical
10	Spelling	Spelling error: SME
15	Spelling	Spelling error: Playstation
50	Spelling	Spelling error: Dziękuję
52	Quality issue	Multiple punctuation marks
52	Quality issue	Multiple punctuation marks
65	Quality issue	Multiple punctuation marks
65	Quality issue	Multiple punctuation marks

Inline tags History

- (1)HTML: <b>
- (2)HTML: <b>
- (3)HTML: </b>

Segments Total: 67 Done: 13 To be done: 54 Words Total: 788 Done: 139 To be done: 649 Characters: 1

XTM enables you also to use [regular expressions](#) to perform an in-depth quality assurance check. You can choose between a series of predefined regular expressions in the QA profile.

## LQA

**Linguistic Quality Assurance (LQA)** is a comprehensive, multi-level process that includes a large number of factors that all aim to measure, control and increase the linguistic quality of any text.

While [QA checks \(on page 51\)](#) are performed automatically, LQA is always performed by human linguists. Using a pre-determined methodology, they determine if the translation contains any **objective errors** grouped into categories. These may include:

- inaccuracy or inconsistency with glossary, style guide or translation memory
- inadequate spelling, grammar, punctuation
- wrong register
- omissions
- different meaning/mistranslation/incorrect translation

The process of performing LQA begins with the recording of the errors in translation and ends with reporting analysis. For that purpose an evaluator can use a special form or use a TMS-embedded one.

In XTM, the LQA feature is a translation quality scoring system based on the Multidimensional Quality Metrics (MQM) model which has been designed as part of the [QT Launchpad project](#). As a result it is

flexible (can be easily configured to meet your needs), suitable for all translation methods (including MT ([on page 71](#))) and comparable.

You can also set the weight for each item and severity multiplier for neutral, minor, major, and critical items, or add new errors.

XTM offers different methods of calculating LQA scores:

- based on the number of words in the target text (default option)
- based on the number of words in the source text
- Reference Word Count (RWC) which can be added to either of the other methods.

After the process is completed in *XTM Workbench*, you can view LQA results next to each user or download an LQA report as an Excel file.

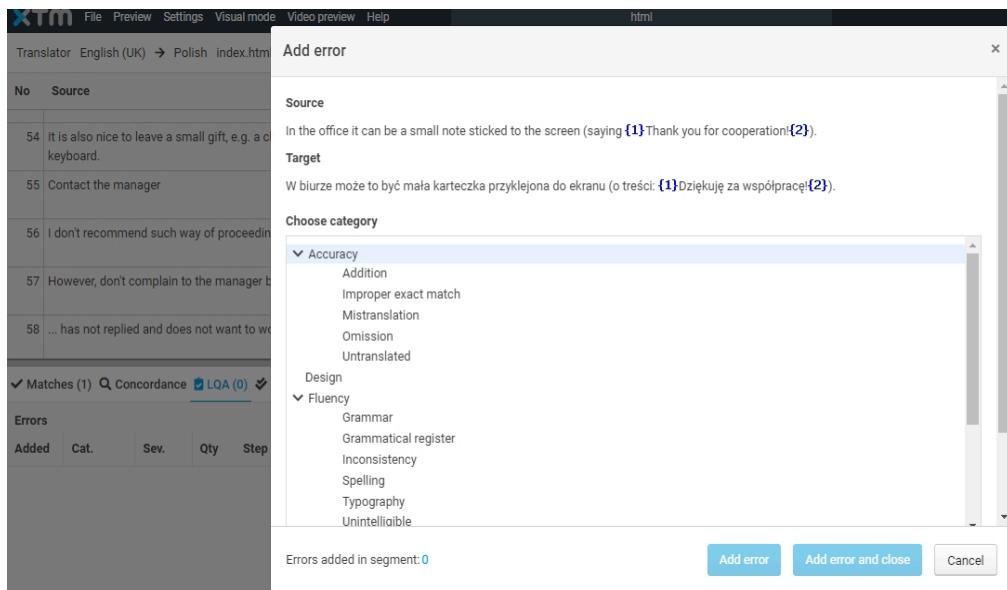
Figure 28. LQA report

Severity multipliers		LQA report	29-04-2022 18:00						
Project	html	Word count	788			Total	99,75%		
Issue type	Weight	Target text issues				Penalty		Target subscore	
		Neutral	Minor	Major	Critical	Raw	Adj.		
TOTAL	1	1	2	0	0	2	2	99,75%	
Terminology	1	0	1	0	0	1	1	99,87%	
Accuracy	1	1	1	0	0	1	1	99,87%	
Mistranslation	1	1	1	0	0	1	1	99,87%	
Language	Polish	Word count	788			Total	99,75%		
Issue type	Weight	Target text issues				Penalty		Target subscore	
		Neutral	Minor	Major	Critical	Raw	Adj.		
TOTAL	1	1	2	0	0	2	2	99,75%	
Terminology	1	0	1	0	0	1	1	99,87%	
Accuracy	1	1	1	0	0	1	1	99,87%	
Mistranslation	1	1	1	0	0	1	1	99,87%	

LQA can be a separate service or a part of the translation service that you buy from your LSP ([on page 71](#)). In any case, XTM enables you to perform it using a separate *LQA workflow step*.

Usually, when the score is below 93%, the test is failed and the translation should be returned to the linguist for correction.

Figure 29. LQA feature in XTM Workbench



## Machine translation

*Machine translation (on page 71)* engines are third-party systems that are not standard components of a TMS.

A company that wants to use MT needs to have an account with an MT provider or configure a custom engine. Only then is it possible to connect the MT engine to TMS via an interface.

In TMS you mostly use it in combination with [post-editing service \(on page 72\)](#) to combine the advantages of both options: the speed and ability of MT engines to quickly handle large volumes of text with the skill and sensitivity of trained linguists.

As a result, it is important to choose a TMS that offers a range of fully managed engines from leading MT providers. In addition, you should be able to choose **more than one engine**, because you may decide to use one for a particular language pair or domain and another for a different one.

For more information on machine translation performance for different language pairs and content, consult the [Memsource Machine Translation Report](#) or the [State of Machine Translation report](#) by Intento.

Here is a choice available in XTM:

Figure 30. Machine translation engines in XTM

The screenshot shows the XTM interface with the 'Settings' tab active. In the 'Machine translation' section, there is a list of MT engines. Each engine has a checkbox next to its name. The engines listed are: Google Translate, SmartMATE by Criteo, KarmenMT.com, lingo24, SYSTRAN, Iconic, omniscien technologies, Microsoft Translator, CROSSLANG TRANSLATION AUTOMATION, Oneliner, DeepL, SAP, tauyou, AWS Amazon Translate, AMPLEXOR, GEOFLUENT by Lionbridge, SDL BeGlobal, and Intento. The 'DeepL' engine is currently selected.

What you should also note is the ability to choose an MT hub (e.g. [Intento](#)) or the option to *add your custom MT* (e.g. the one you have created yourself or the one developed by a third-party provider).

After you decide on an MT engine or engines, all you need to do is create an account with a given provider, subscribe to a selected plan, and get an authentication key for CAT tools to be copied to a relevant place.

Figure 31. MT authentication in XTM

The screenshot shows the 'DeepL Translator' configuration page. It includes fields for 'Default setting' (checkbox), 'Authentication key' (text input field containing '379 -1a -8 4- 8- 17a 02'), and 'Send text for matching' (checkbox). Below these are three radio button options: 'In XTM Workbench', 'After analysis', and 'After analysis and in XTM Workbench'. The 'After analysis and in XTM Workbench' option is selected.

You should also decide how this MT engine will work for your translation projects. All in all, with it you get another support in addition to your *Translation memory (TM)*. When you have some TM matches, you send these to an MT engine to fill in the blanks, creating an opportunity to leverage existing resources in an innovative way.

Figure 32. MT leverage options in XTM



A great benefit of using MT in a TMS is that you use its **secure version** in comparison to the free web-based tool. Your texts are never stored or used by an MT provider to improve its engine.

In addition, while working in XTM, you can translate all [supported file formats \(on page 32\)](#) using an MT engine, and not only a few selected files (e.g. Word or PowerPoint).

## Connectors

*Learn how to gain more control over your content by integrating content management systems and translation management systems via a connector.*

XTM offers you a possibility of using [different connectors](#) that have already been established for and tested by other companies. However, you can also contact the development team for an offer of a custom-made integration with the system that is not on the above list. It can be pricey, though, and may also require some work from your IT team so be prepared with some additional financial and human resources.

### What is a TMS connector?

A TMS connector makes it possible to transfer content from your content management system (CMS) to the TMS easily using a set of protocols. There, it can be translated, whether by machine translation, professional translators, or both. Afterwards, the connector can upload the translated files back into the CMS so you can easily access them. In fact, any organization that works with high volumes of content in multiple languages could benefit from a TMS connector. For example, a company with a multilingual website and a blog that requires frequent updates can benefit from a TMS connector that connects their website CMS to their [LSP's \(on page 71\)](#) TMS.

The integrations between systems are made possible by a layer of software (a connector) based on the RESTFUL API principles of push and pull. Depending on the types of systems, these integrations can be either lightweight, which involves very little set-up, or more intricate middleware type configurations.

There are many different connector types depending on what they are used for:

- content management system (CMS) (e.g. Wordpress)
- e-commerce
- customer relationship management (CRM) and customer service
- marketing content and marketing automation
- code repositories (e.g. GitHub)
- product information management (PIM) system
- cloud service solutions
- digital asset management (DAM)

### **What are the benefits of using them?**

The connectors save time, reduce file management costs, cut down turnaround times and make localization simple. You also have more control over your content and can reduce human errors since the whole process is automatic.

### **XTM example**

XTM offers you a possibility of using [different connectors](#) that have already been established for and tested by other companies. However, you can also contact the development team for an offer of a custom-made integration with the system that is not on the above list. It can be pricey, though, and may also require some work from your IT team so be prepared with some additional financial and human resources.

Since the release of XTM version 13.0, its connectors have entered a continuous deployment cycle, providing ongoing releases of new features. This means that you will see updates being made to connectors in between main releases, enabling use of new connector functionality faster.

For a more comprehensive reference to TMS integrations, you can visit [Nimdzi](#).

## **Security**

*Nowadays, data security is on top of mind of all businesses, with the translation industry being no exception.*

On one hand, it concerns the confidentiality of transmitted content and the protection of sensitive data. On the other, data is power so it is a must to protect it against accidental loss, especially in case of a cloud solution.

With all legal and compliance obligations, you need to choose a TMS carefully in cooperation with the legal and IT departments to adapt the translation process to your needs. You will certainly need to

ask your TMS provider to sign a DPA and NDA. If you can provide them with your corporate terms, the better for you.

There are certain aspects that should be kept in mind to ensure the secure environment for your translation management. It is important to check if your TMS of choice offers the following features:

- Using SSL certificate - to ensure secure communication via HTTPS
- Enabling API authentication for new users
- Allowing 2-Step verification
- LDAP authentication (e.g. for corporate Active Directory)
- Configuring allowed login attempts
- Disabling account after non-use
- Configuring computer activation level
- Password settings (e.g. duration, strength, use of brute force dictionary)
- Privacy settings (e.g. option to hide the names or details of other users of the system)

All of these are provided by XTM being a **secure environment** to work in.

In addition, XTM is **ISO/IEC 27001: 2017-06** certified, which confirms that the provider has the processes in place to protect customer data. It's also evident that its information security management system (ISMIS) is able to minimize risk and ensure business continuity by pro-actively limiting the impact of a security breach.

## Documentation

*When you start working with a new tool, it is extremely useful to have relevant documentation at hand to refer to it when you need it.*

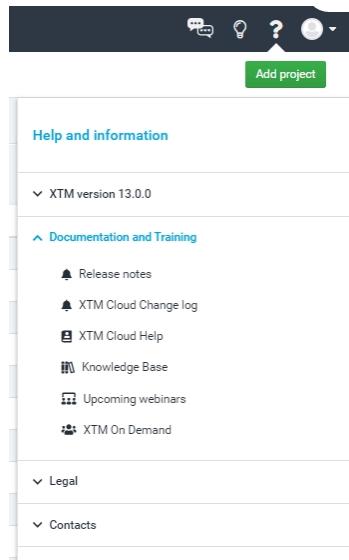
Most TMS providers offer you a variety of ways to broaden your knowledge of their tools. Here is what you may benefit from if you decide to use XTM:

- **User Guides:** general (for top features) and more specific (e.g. for connectors, APIs). They are available online (e.g. [online help](#)) or for download as pdf files (e.g. [manual for Offline Editor](#)).
- **Knowledge base:** introduction to a few general topics presented in the form of FAQ
- **XTM On Demand:** a video platform giving access to [webinars](#) delivered by XTM experts
- **XTM Live:** the leading translation technology summit for localization professionals from international enterprises.

- **TechTalks:** open discussions with technology leaders on key language technology topics (current trends, innovations and latest developments in language technology).
- **Release notes:** listing changes made to particular XTM Cloud versions as well as its products (e.g. Connect, Portal, Mobile). You can choose between reading a [description](#) or a full [change log](#).

You can also access help and information for users directly from XTM:

Figure 33. Help section in XTM



**Note:**

It is very important for the documentation to be easily accessible, user-friendly and up-to-date!

## Support

*High-quality documentation is useful, but in some cases it may not be enough. As with every IT tool, with TMSs you can also experience technical problems.*

Then, you need to have access to a **professional support team**, available at least during business hours. You can turn to them if:

- you or your translation vendors cannot work in a TMS due to unavailability of a certain feature (critical bug)
- you want to report a bug you or your translation vendors have found that is important or minor, but not critical
- you wish to know more about a certain feature that is not explained in the documentation
- you would like to have a report generated from the TMS that you cannot do yourself (e.g. on the average number of concurrent users in a specific period of time)

How can you contact **XTM support?**

- send an email to a dedicated address ([support@xtm-intl.com](mailto:support@xtm-intl.com))
- call them at +48 61 654 91 53
- log in to the **Support Portal** to create a new support ticket or check the ticket status and provide additional information. Here you can also check if you can solve your issue by reading a FAQ. The Portal helps the XTM Support Team organize the issues reported by XTM users and keep track of the progress of handling issues.

The response and resolution times are governed by the SLA that you sign with your TMS provider. They should be confirmed each time you report a bug.

Figure 34. Automatic reply from XTM Support Team

Hi!  
Thank you for raising support ticket <https://support.xtm-intl.com/helpdesk/tickets/341838>. We have assigned it the following properties:  
Type: Technical action  
Priority: High  
Agent: J T  
Maximum resolution time: April 8 2022 at 04:36 PM CEST  
  
Please note, the delivery timescale reflects our SLA agreement and is counted in business days, which for XTM are Monday-Friday.  
We will resolve your issue as quickly as possible, and your needs will always be a priority to us. We trust you agree with our policy of resolving issues according to case-by-case urgency, and please feel free to visit our portal to check on a ticket's status.  
  
Thank you for your continued trust and understanding.  
  
Best regards  
XTM Support Team

## Customer Success Manager

If you need assistance with any TMS feature or would like to know more about the tool's development plan, you should be able to address a **Customer Success Manager** (CSM) or any other person fulfilling a similar function. This person works with customers to ensure they are receiving the tools and support needed to achieve their goals.

As a result, it is good to make sure that you can count on such contact from the TMS's provider you wish to purchase.

At XTM, a Customer Success Manager is a main point of contact for commercial and general questions. As part of the Customer Success team this person is a clients' advocate aimed at improving their experience.

## Consulting service

This is a novelty in the TMS sector and is currently available only from [Memsource](#). However, we can expect it to be launched by other providers soon.

It is a subscription-based service provided by subject-matter experts for customers who can ask questions or seek support whenever they need help. There is no limit of the number of hours spent both by a customer and the consultants, and the costs of this service are known upfront in the subscription agreement.

The consulting service covers the following areas:

- migration support (transferring TMs and other content from CAT tools, other TMSs and CMSs)
- automation and integration support (connection of various tools using API)
- machine translation support (quality, types of content, pricing strategy)

For more details please visit [Memsource blog](#).

## Product development

*You have bought a TMS and what comes next? Since every IT tool is upgraded from time to time and you get the new version instantly if you use the cloud-based software, you need to be ready for constant changes.*

However, you can also have an impact on the future development plan of a TMS to improve your translation process and achieve your business goals. How is it possible? Your TMS provider can offer a variety of ways to involve you in shaping of the development of its features. Here are a few opportunities:

### XTM Wish List

With XTM Wish List available from [XTM On Demand](#), you can request or vote for new features. This portal is a platform for customers to submit feedback and suggest what should appear in the TMS. As a result, you can play an active part in creating future versions of the XTM product portfolio.

## **XTM Labs**

[XTM Labs](#) is a brand new concept leveraging on XTM Wish List. When new features and upgrades that you suggested are included in the next release, you'll get exclusive access to them. You'll also be able to submit feedback before it becomes available to everyone else, and customize them.

## **Product Manager**

The position of a Product Manager is a role key to meeting the unique requirements of clients by driving continual improvement to TMS's product strategy. This person works with development teams, as well as with users and customers to collect and analyze their feedback, which is later transformed into a product roadmap.

As a result, it is good to have direct contact to such person at the TMS providers' to be able to voice your requirements and hear about planned releases.

# Chapter 5. Go-Live

*Once you have made your decision, it's time to think how to move your process to the selected TMS.*

You thought it took a long time to make up your mind on which TMS to choose for your company, but it may take even longer to prepare the whole go-live process. Draft a plan involving your internal stakeholders, translation resources and vendors - there are so many aspects to cover. And... once again remember about the deadline you set earlier.

The final process should include the following steps:

- [Preparing for launch \(on page 63\)](#)
- [Managing user access rights and roles \(on page 65\)](#)
- [Setting up TMS to work with your vendors \(on page 66\)](#)
- [Agreeing on best cooperation practices \(on page 67\)](#)

## Preparing for launch

*You have made your choice and still need to comply with a lot of formalities before you can start working with your TMS.*

Start this stage only after you have received an **approval** to buy the selected TMS from your management.

Follow these steps to ensure that your new tool finds its place in your company.

1. Start the sales process with the TMS provider (either through your purchasing department or on your own):
  - a. Ask the TMS provider for all necessary agreements ([subscription agreement](#), [Non-Disclosure Agreement \(NDA\)](#), [Service Level Agreement \(SLA\)](#), [Data Protection Agreement \(DPA\)](#)) if applicable. You can also use your templates if available.
  - b. Consult these documents with your legal department. Allocate some time for this part because the negotiation process is usually a lengthy one.
  - c. Request an offer to be presented to the management for final approval (containing all the terms and conditions of purchase).
  - d. Arrange for a TMS to be installed on-premises or on your instance in the cloud.

2. Train your team, translation vendors and other internal customers that need to work with it.

You need some time to implement it and learn how to use it.

- a. Prepare internal documentation for your new TMS to present its main features and benefits of using it.
- b. Manage the whole onboarding process by delivering training to new users (project managers, reviewers, translators).
- c. Draft relevant documentation (e.g. checklist for translation vendors, guide on how to review documents for in-house reviewers).
- d. Set yourself as the first point of contact for all TMS-related issues (user access rights, technical support).
- e. Carry out an internal marketing campaign for your refreshed translation process with your TMS as the key tool. Advertise it e.g. in the intranet.
- f. Start looking for new partners if not all of your translation vendors wish to continue cooperation with you with the use of the new TMS.

3. Collect all your [TMs \(on page 73\)](#) and [TBs \(on page 73\)](#) (if any) from your previous vendors and migrate them to the TMS. Create [workflows \(on page 30\)](#), user accounts with relevant [access rights and roles \(on page 65\)](#).

4. Set the go-live date and start working with your new TMS. Initially process only some projects (the easiest ones) and gradually move the whole translation process to it. Once you discover all the TMS's features, you will no longer imagine work outside it ;). You will process even very complex projects in it.
5. Be prepared to report on TMS key metrics such as translation volume (number of TM segments, translated words), language pairs, discounts on TM use, overall external costs. It is a good idea to have an Excel report at hand with all relevant data generated from TMS from time to time. Every management would like to be updated on the metrics (Key Performance Indicators - KPIs) relating to the process.

Once in a while, review your decision:

- Check if the TMS meets your business needs: are there more advantages than disadvantages from using it? Are all of your company's requirements met?
- Continue taking part in webinars to be up-to-date with your TMS upgrades.
- Check what is available in the market: has anything new appeared or changed in the TMS offer?
- Ask yourself a question if you are satisfied with cooperation with this TMS provider (e.g. as regards IT support, your customer success manager).
- Conduct a satisfaction survey among your vendors and/or your internal clients working in this TMS. Analyze its results and present it in a form of an executive report for your management.

## Managing user access rights and roles

*TMS is a platform where all translation project participants meet. To streamline its, you should manage your vendors in a structured and efficient way so that all parties are satisfied with this cooperation and bring your translation process to the next level.*

That's why it is important to manage these users effectively so that everyone could make the best use of this tool. On the other hand, you should also be able to restrict access to certain features to protect your company's content.

It is up to you as the manager of your corporate translation resources to define what third-party users are allowed to do in a TMS. For example, it may be necessary to determine if users can modify, import, export, view and add TM entries or limit their ability to do so. The same goes for [LQA \(on page 52\)](#) results, *Concordance* and *Terminology*.

Here is how you can manage **users' access** to different features in XTM:

Figure 35. Users access rights in XTM

The screenshot shows the XTM software interface with the 'Settings' tab selected. The left sidebar includes links for User details, My account, Data, Settings, and Filter templates. The main content area has two main sections: 'Linguist metadata access' and 'Linguist general options'. Under 'Linguist metadata access', there are dropdowns for Access to project description (set to 'LSP only'), Access to reference ID (set to 'No'), and Access to custom fields (set to 'No'). Under 'Linguist general options', there are several groups of checkboxes and dropdowns: 'Allow linguists to download' (checkboxes for Source, Target, PDF, HTML, TMX, TIPP, Xliff, etc.), 'Allow linguists to upload' (checkboxes for Target, Excel, PDF review, etc.), 'Allow setup of File upload/download options by project managers' (checkbox), 'Allow linguists to use Microsoft Word spelling checker' (checkbox), 'Allow linguists to use Xbench' (checkbox), 'Assign all group tasks to one linguist' (dropdown set to 'Only the selected task'), 'Show user details in Extended table' (dropdown set to 'Block'), 'For a project, open XTM Workbench for' (radio buttons for 'All files' and 'Only assigned files'), 'Linguist access to TM metadata & Concordance' (checkbox), 'Prefer XTM Workbench in XTM Visual Mode (if available)' (checkbox), 'Pre-processing: show original source in a column' (checkbox), 'Show Customer name on LSP account' (checkbox set to 'No'), and 'Terminology access level' (dropdown set to 'Without customer details').

It is a nice-have to be able to set access rights globally, for all user roles (as shown above) and for particular users.

In XTM there are both pre-defined and configurable **user roles** with different access rights:

- Pre-defined roles:

- Administrator - the highest level of user with access to all functions
- Project Manager - able to create and edit other Project Managers, Linguists, Customers, manage projects, access and download reports
- Linguist - has access to any of the 4 steps in the workflow
- Terminologist - has access to Terminology
- TM Expert - has access only to TM Manager

- Configurable roles:

- PM Creator & Viewer (Limited Project Managers)
- PM Projects and Customers (Limited Project Managers)
- Cost Approver
- Requester

It is possible to subcontract projects by creating an [LSP \(on page 71\)](#) account being a special type of user.

Apart from access rights for each user you can define language pairs and rate cards to be able to generate automatic [purchase orders \(on page 37\)](#). You can also define a rating for quality and punctuality, which helps choose the best providers for your translation projects.

## Setting up TMS to work with your vendors

*This is how you can set up the TMS environment for your translation vendors based on the XTM example.*

Make sure you have migrated all [TMs \(on page 73\)](#) and [TBs \(on page 73\)](#) to your new TMS. List all vendors who are willing to work in the TMS and sign all the necessary agreements with them.

Follow these steps to ensure that your vendors are integrated in the TMS.

1. Create an account for your vendor.

- a. For translator/reviewer, choose the *Linguist* role and assign relevant workflows (e.g. Translate, Correct).
- b. For [LSP \(on page 71\)](#), use the *Subcontracting* feature.

2. Ask your vendor to go through the setting up process. It includes [computer activation](#) (for all users) and [setting up a connection](#) (for LSPs).

You will receive a notification that this process was successful.

3. Complete your vendor's language pairs, billing details and rates.

4. Optionally: Assign a relevant number of licences to your vendor.

5. Create a test project for your vendor. LSPs should set up accounts for their PMs and linguists and check workflows.

The vendor confirms to be ready to work in the TMS.

6. Send all training materials to your vendor, such as user manuals and checklist (if any).

7. Create a real project in the TMS, assign it to your vendor, and start working.



**Note:**

LSPs can decide to buy their own licences, use free accounts, or combine both options.

## Agreeing on best cooperation practices

*Once you have set up the TMS in your company, you need to inform your vendors that you will soon use it for all the translation projects.*

However, before you start, you should agree on certain aspects because work with TMS may be different than the standard terms of cooperation: In particular, you should clarify the following issues:

### Terms of cooperation

- Decide what kind of agreements you should sign with your vendors depending on your business needs (compliance) – Cooperation Agreement, *Non-Disclosure Agreement (NDA)*, *Service Level Agreement (SLA)*, annexes (e.g. complaints procedure, LQA process, *rate cards* ([on page 37](#))), etc.
- Discuss the invoicing terms with your vendor – if you should be invoiced in advance or after translation, monthly or after each project, based on [purchase order](#) ([on page 37](#)) from TMS or PO from your vendor.
- Agree with your vendor on how to deal with confidential texts (e.g. work outside TMS).
- Inform your vendor that not all projects may be processed in TMS (e.g. certified translations, patents, etc.) and agree on a suitable process and pricing for them.
- Agree with your vendor on how to proceed with non-editable graphics (e.g. export texts to open format files, additional price, etc.).
- Prepare a checklist for your vendors, outlining aspects not covered by the Cooperation Agreement to be used with your projects in TMS.
- Make sure the *Language Service Provider (LSP)* informs its linguists of all relevant aspects of cooperation with you and ensures all the PMs are also updated.

## Communication

- Decide upon the main communication channel with your vendor for your translation projects (email, TMS notifications, vendor's client portal, etc.)
- Agree on communication process during the project e.g. when translators have questions – how project participants (linguists, PMs, client) should proceed to keep the deadline.
- Remember that your vendors may work in different time zones and countries so when setting deadlines make sure you specify it and take account of holidays different than yours.
- Discuss with your vendor what to do in case of technical problems with the TMS (if you should be the contact person or they can contact support directly).
- Establish the way of how you should be informed that the vendor has finished the project and how files should be transferred to you (via TMS, by email, via data transfer system, etc.).

## Translation in TMS

- Send all reference materials to your vendor, which may help linguist deliver accurate translations. These may include corporate websites, previous translations (not existing in your TM), offline glossaries, etc.
- Inform your vendor about the need to use of *Translation memory (TM)*, *Termbase (TB)*, Concordance and what to do in case of conflicting matches (e.g. use the most recent one).
- Discuss with your vendor whether linguists can use machine translation for particular projects or not.
- Ask your vendors to use in-context preview if available for particular files to check the translation in reality (not only in the text editor) and the length of texts.
- Make sure the vendor understands the need to run automatic QA on a file in TMS to check e.g. non-translated texts or invalid inline tags.
- Ensure your vendor generates the target file from TMS to check its layout after translation (e.g. if there are no hidden texts or if the file is ready to be sent to the final client). If there are layout issues, agree with the vendor who should fix them (if the vendor, discuss an additional price).
- Ask your vendor to confirm all segments in the text editor so that the TM could be updated automatically.
- Inform your vendor about the need to follow messages from TMS concerning its potential unavailability for maintenance, which may affect their work and your deadline.
- Discuss with your vendor how many licenses they will need for their linguists. Inform them that your TMS may be unavailable at certain times due to the exceeding of the number of concurrent users (if applicable).



**Note:**

It is a good practice to prepare a checklist for your vendors, outlining aspects not covered by the Cooperation Agreement to be used. It may list some or all of the above issues relevant for dealing with your projects in the TMS.

# Chapter 6. Glossary

*Find the meaning of some key terms from the translation and localization industry.*

## Data Protection Agreement (DPA)

It is an agreement between a data controller (such as a company) and a data processor (such as a third-party service provider). It regulates any personal data processing conducted for business purposes. Recently, it has become an important part of business relations in the translation industry due to the entry of the [General Data Protection Regulation](#) in the EU.

## Fuzzy matches

Each CAT tool divides a text into segments. Then, it begins analysing the text against a relevant translation memory. As a result, each segment is given a score, i.e. a match ranging from 1 to 99%. Matches are important because they speed up the translation process and provide discounts. As a result, you save a lot on a bigger translation memory and similar texts stored in it. There are different types of matches:

- *101% match* (also called: ICE match or a context match) is an identical segment in an identical context, which means we the translator can be sure this match can be approved, because the segments before and after it are also identical.
- *100% match* (also called: identical match) is an identical segment, but the segment before or after it is different, which means it still needs to be checked by the translator.
- *99% - 95% matches* – almost exact matches; it is usually enough to check the tags or particular words in the segment
- *95% - 75% matches* – they are called high and medium fuzzy matches which show similar texts in the translation memory where some changes are needed
- *75% - 50% matches* – low fuzzy matches usually useless for the translation process and most CAT tools do not show them at all; as a result such segments are considered “no matches” for which you need to pay the whole price
- *Fuzzy repeat matches (95% - 75% internal matches)* – these are similar segments found not in the translation memory, but across one file or more files in one project. Not all vendors provide discounts on them, but you can always try to convince them.

- *Repetitions* – are types of internal matches, i.e. identical segments found across one file or more files in one project. However, their special status is due to the fact that most vendors charge less for them, while not willing to pay less for the others.
- *Machine translation matches* – if you use an MT engine for your translation project, each segment for which no fuzzy match was found in the TM is propagated with machine translation from this engine

## Inline tag

It is a label that define the way a certain information should be processed. In CAT tools generally, tags are used to mark parts of a text that correspond to:

- different formatting i.e. different fonts, font sizes, line breaks or colors
- internal code (e.g. HTML, index entries or cross-references)
- other special characters

However, sometimes they are just minor (or even invisible) changes.

## Localization (L10n)

Localization is the process of adapting a product, service, advertising or any other content to a specific market. It should be considered different from translation because it actually goes way beyond. Localization requires you to convert text from one language to another, taking into consideration all the different factors such as: time zones, currencies, symbols, colours, legal requirements, website links, product beliefs and cultural references. The goal is to give your content the look and feel of having been created specifically for each target market you're aiming at.

## Language Service Provider (LSP)

It is a broader term for a translation vendor, meaning an organization that offers language-related services (i.e. translation, interpreting, localization, transcreation, transcription, subtitling, voice-over). An LSP can include a translation agency, a company, or an individual.

## Machine translation (MT)

It is defined in ISO 18587:2017 as automatic translation of text from one natural language to another using a computer application. Machine translation is a hot topic in the translation

industry right now with everyone talking about it both in respect of the human factor and the tools used in the process. MT quality has dramatically improved over the past few years. Many enterprises and language service providers have turned to MT for faster and more cost-effective translation.

## Non-Disclosure Agreement (NDA)

It is also known as a confidentiality agreement (CA) under which the parties agree not to disclose any information covered by it. It is especially important when translating sensitive or confidential information contained in documents. Many translation vendors fail to properly protect their customer's information which can lead to many legal issues. You have a choice: to sign your NDA or your vendor's NDA. This agreement can be signed between the client and LSP, and between LSP and translator/reviewer.

## Post-editing (PE)

Service defined in ISO 18587:2017 as editing and correcting machine translation output. There are two main levels of post-editing, light and full; their use depends on the purpose of the translation output and the client's requirements:

- *full post-editing* - process to obtain a product comparable to a product obtained by human translation
- *light post-editing* - process to obtain a merely comprehensible text without any attempt to produce a product comparable to a product obtained by human translation

## Service Level Agreement (SLA)

This agreement defines the scope of expectations and needs of the client in relation to the service delivered by the software provider. It can outline the following aspects:

- minimum time of system availability
- time of providing a solution to reported issues
- procedure of reporting and monitoring issues
- consequences of failure to comply with the terms of agreement (e.g. compensation)

## Termbase (TB)

A termbase (TB), also known as terminology database, is a glossary of industry-specific and company-specific terms, which you can manage outside your translation memories. It is a glossary of terms in a CAT tool that you can create to be able to search for individual words and display them among translation results. It is useful if there are multiple translators working on the same project and it's important to keep accuracy and consistency regarding the main terms. It can be single-language or multilingual. A term base shows the translators which terms are new, approved, forbidden, or preferred together with their additional description, definition or picture.

## Translation memory (TM)

It is an electronic collection of source language and target language segment pairs. Its purpose is to facilitate the retrieval and use of previously translated content. It is a database of translated sentences (segments), which is created during the translation process [source: ISO 17100:2015 Translation services – Requirements for translation services]. A translation memory has been at the core of the industry since the late 1990s and its importance has not faded even with the arrival of new technologies.