Example-based machine translation (EBMT) is a corpus-driven method of machine translation. It builds the translation using analogy of the input text with a translation already made. The benefit of using linguistic knowledge within EBMT is the subject of this thesis. Two language pairs are covered: Czech-English and Czech-German. The thesis covers gathering annotated parallel Czech-German data, design and implementation process of an experimental EBMT system, and the effort to improve it using linguistic knowledge. Detailed evaluation and comparison of both the baseline EBMT and the linguistically enhanced system are described. Evaluation has been done using machine and human evaluation methods. The three automatic evaluation methods are BLEU, NIST and METEOR. The linguistic enhancement of the baseline EBMT system includes comparisons of the input sentence with the examples in the translation memory based on morphology and syntax.