We propose an alternative method of machine-aided translation: Structure-Based Machine Translation (SBMT). SBMT uses language structure matching techniques to reduce complicated grammar rules and provide efficient and feasible translation results. SBMT comprises the following four features (1) source language input sentence analysis; (2) source language sentence transformation into target language structure; (3) dictionary lookup; and (4) semantic disambiguation or word sense disambiguation (WSD) for correct output selection. SBMT has been designed and a prototype system has been implemented that generates satisfactory translations.