1. Analysis: multiple layers

- a-layer – dependency trees
  - one node per token: form, lemma, POS tag, morphological features, dependency relations
- t-layer – deep syntactic trees
  - only content words have nodes:
    - t-lemma: deep lemma
    - functor: semantic/syntactic function label
    - formeme: morpho-syntactic function label
    - grammatemes: grammatical meaning

2. Transfer: t-node by t-node

- Independent translation of t-lemmas and formemes
- Discriminative (MaxEnt) models
- Simple conditional probability models
- Each model provides an n-best list of options
- Rule-based transfer of grammatemes
- Hidden Markov Tree Model on the whole resulting t-tree
- Select the best combination of t-lemmas and formemes

3. Synthesis: gradual transformation from t-tree to a-tree

- Grammatemes → morphological attributes
- Enforce basic word order
- Enforce subject-predicate agreement
- Formemes + prepositions, conjunctions
- Add aux verbs, remove imperative subject
- Add articles, negation particles
- Inflection (MorphoDiTa + Flect)
- Delete repeated prepositions in conjuncts
- Punctuation, capitalization

Support for 10 translation directions
- English–Czech translation since 2008, Czech–English since 2015
- New language pairs added in the QTLeap project (2013–2016):

Find TectoMT and Chimera online!
- http://ufal.cz/tectomt
- http://ufal.cz/chimera