A short history of web service composition

- General-purpose programming languages
- Dedicated workflow languages

Web services
- BPEL
- Java
- COBOL
- WSDL
- SOAP
- UDDI

→ exposing heterogeneous applications to a network using XML-based standards for interface description

A short history of web service composition

- Several layers of abstraction:
  - web service composition at a higher level of abstraction, as plug and play composition of existing building blocks
  - visual editing of BPEL processes (for composition experts)
  - textual editing of BPEL processes (for composition experts)
  - easy switching between abstraction levels
  - guiding developers in creating valid compositions

Approach

→ composition logic is nicely modularized
→ programming at low abstraction level
→ composition logic is lost
→ programming at very low abstraction level

The Service Composition Environment (SCE)

Prototype highlights

→ supports general-purpose AOP using Padus (AOP language for BPEL)
→ supports concern-specific languages for common concerns such as billing
→ verifies compatibility of services with composition templates (on interface and protocol level)
→ performs basic quality-of-service checking

Future work

→ pointcut visualization
→ framework for concern-specific languages
→ framework for quality-of-service properties