

## Master Thesis Defense

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### ABSTRACT

With the increasing acceptance of service-oriented computing, a growing area of study is the way to reuse the loosely coupled Web services, distributed throughout the Internet, to fulfill business goals in an automated fashion. When the goals cannot be satisfied by a single Web service, a chain of Web services can work together as a “composition” to satisfy the needs. The problem of finding composition plans to satisfy given requests is referred to as the Web service composition problem. In recent years, many studies have been done in this area, and various approaches have been proposed. However, most existing proposals endorse a static viewpoint over Web service composition; while in the real world, change is the rule rather than an exception. Web services may appear and disappear at any time in a non-predictable way. Therefore, valid composition plans may suddenly become invalid due to the environment changes in the business world. In this thesis, techniques to support reparation for an existing plan as a reaction to environment changes are proposed. Approaches of repair are compared to ones of re-planning, with particular attention to the time and quality of both approaches. It will be argued that the approach advocated in this thesis is a viable solution to improve the adaptation of automated Web service composition processes in the context of the real world.