This talk will center on the theoretical foundations that underpinning the idea of Semantic Web Services. Description Logic is considered to be the formal foundation for many semantic mark-up languages, such as the current W3C standard Ontology Web Language, OWL. On the other hand, pi-calculus, a theory for mobile communicating systems, is a powerful tool to model concurrent system interactions. This talk will briefly introduce these two theories, and put them in the context of Semantic Web Services and service composition.