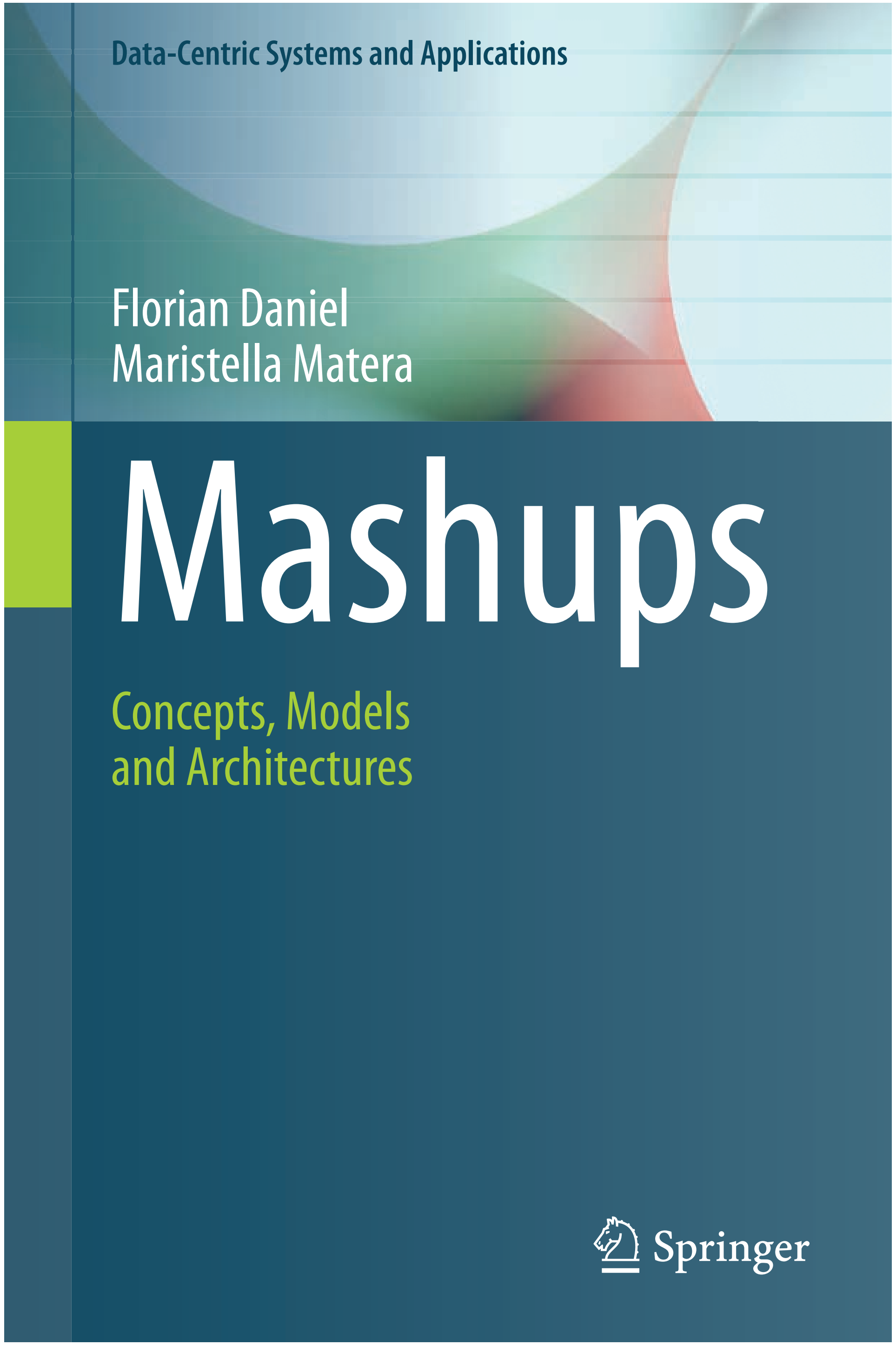


Chapter 2
Data and Application Integration

Figures

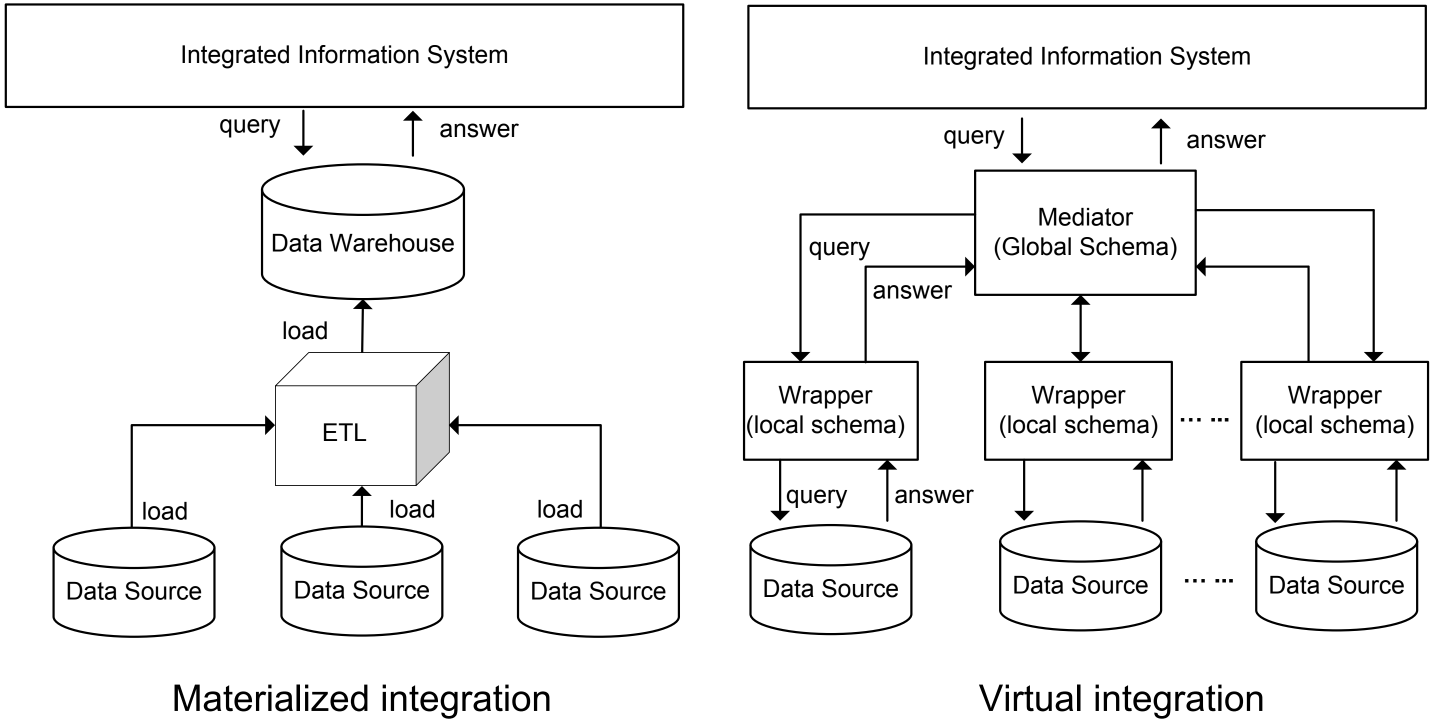


Fig. 2.1 Typical architectures for materialized and virtual data integration [3].

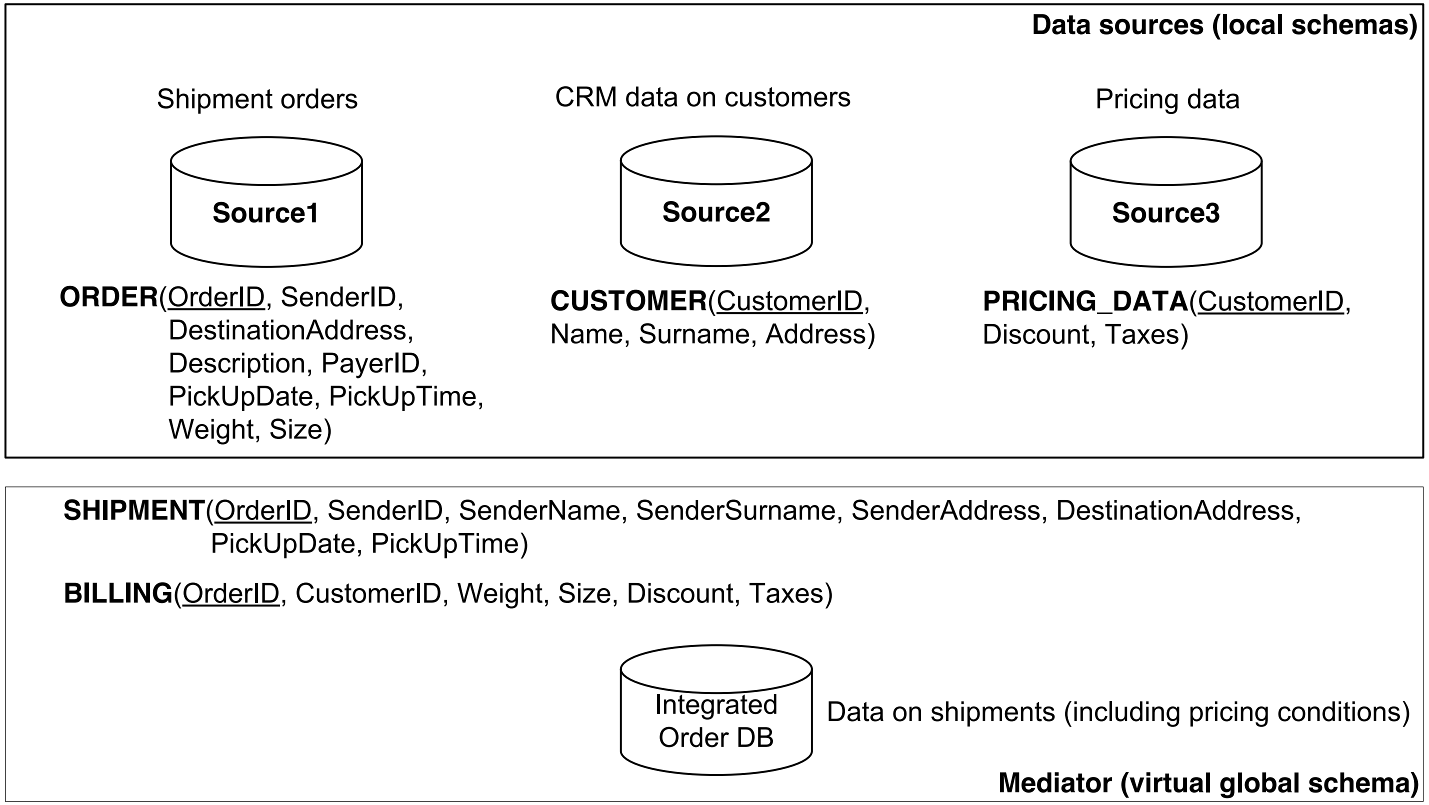
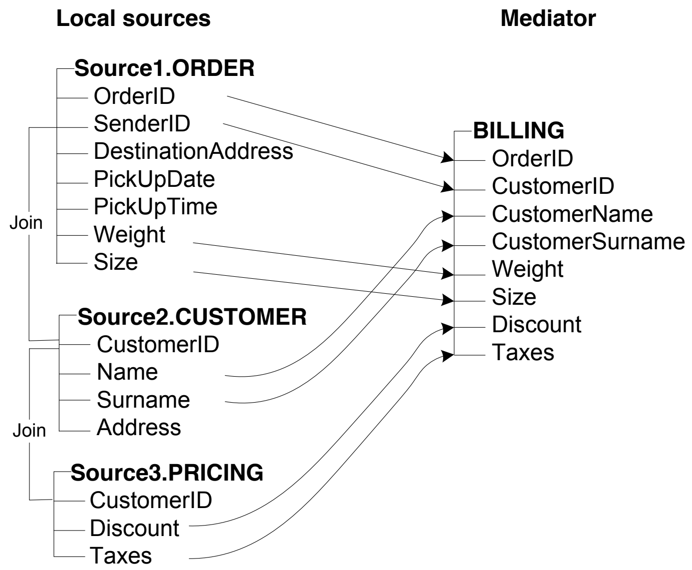
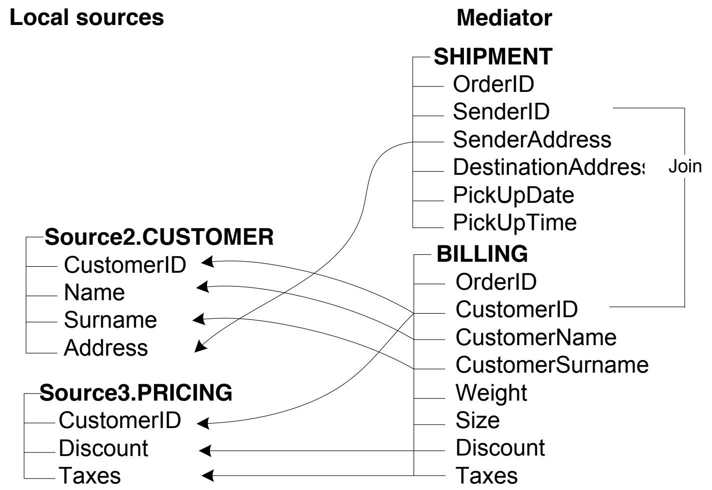


Fig. 2.2 Example of an integrated database storing shipment data extracted from different data sources. Each data source is characterized by a *local schema*. Data integration is performed according to a *vritual global schema* managed by the mediator.



a) **GAV Mapping for the global relation BILLING**. The global relation is defined as a view on the local source relations.



b) **LAV Mapping for Source2 and Source3.** The local source relations are defined as views over the global relations.

Fig. 2.3 Example of GAV and LAV schema mappings for the integrated order DB.

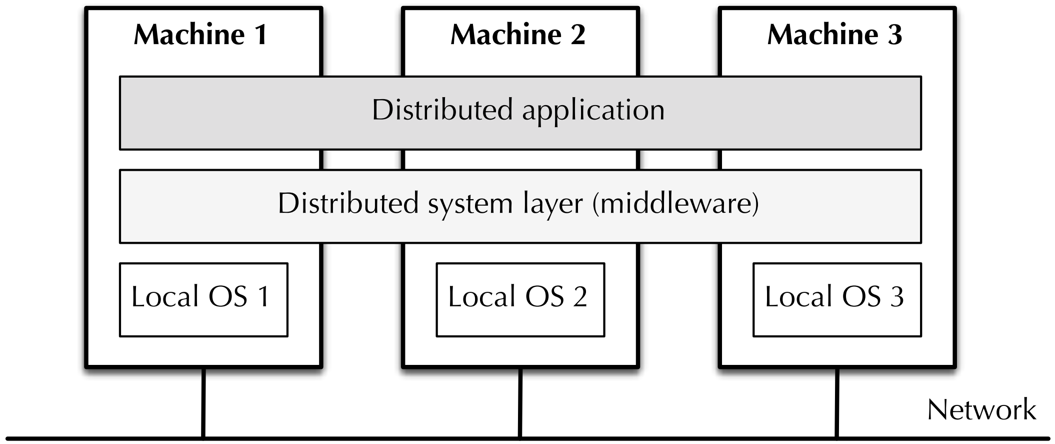


Fig. 2.4 The basic architecture of a distributed system and application.

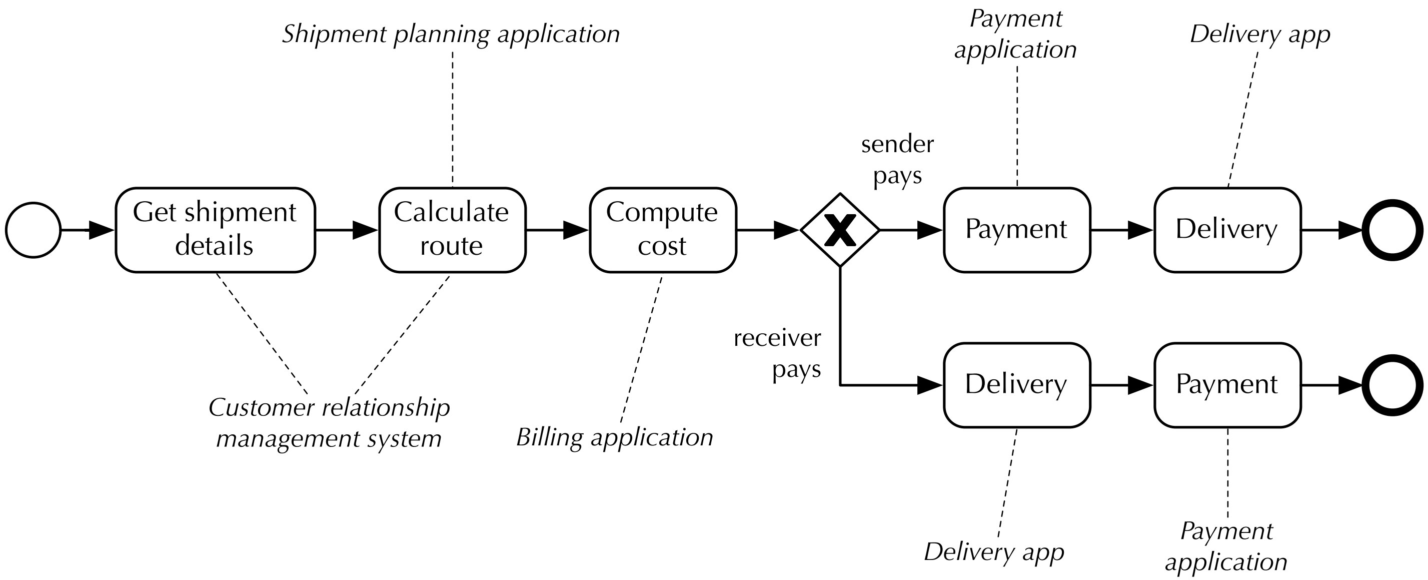


Fig. 2.5 A simplified workflow model of a possible integration logic for the logistics application integration scenario. The model shows how the integration logic coordinates the interaction with existing information systems.

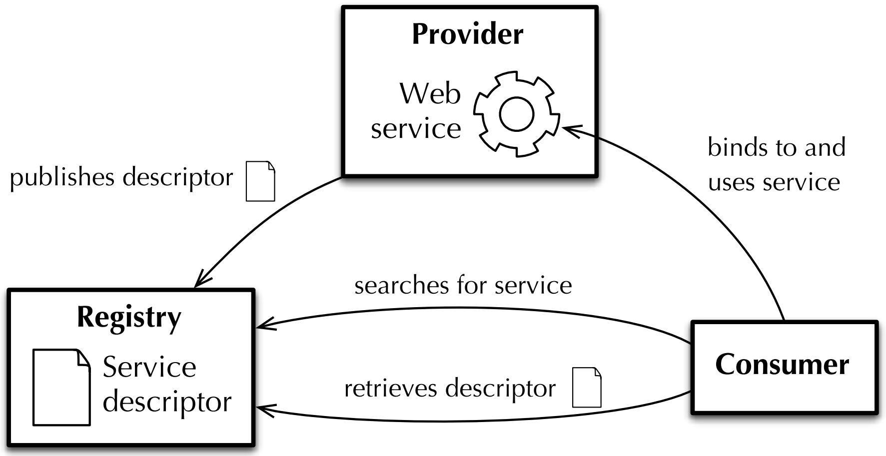


Fig. 2.6 The service-oriented architecture (SOA) with its roles and artifacts.

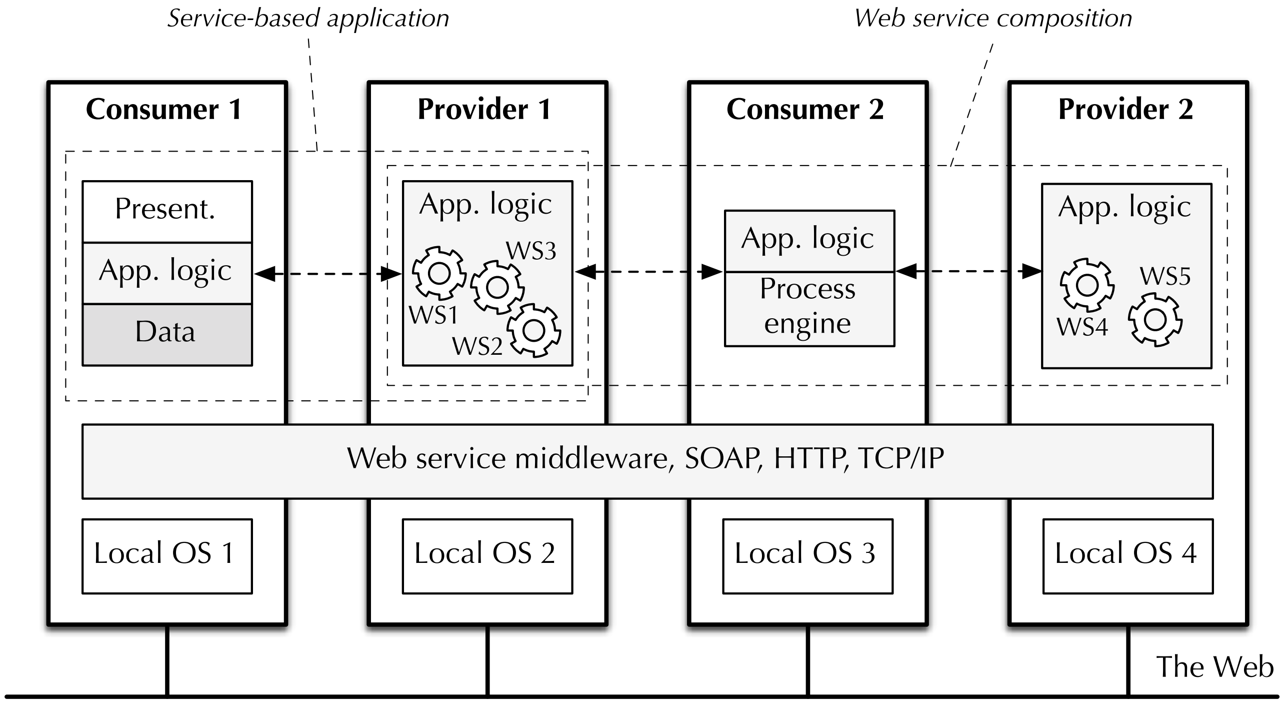


Fig. 2.7 The distributed computing environment enabled by web services as an instance of the generic architecture of distributed systems (see Figure 2.4).

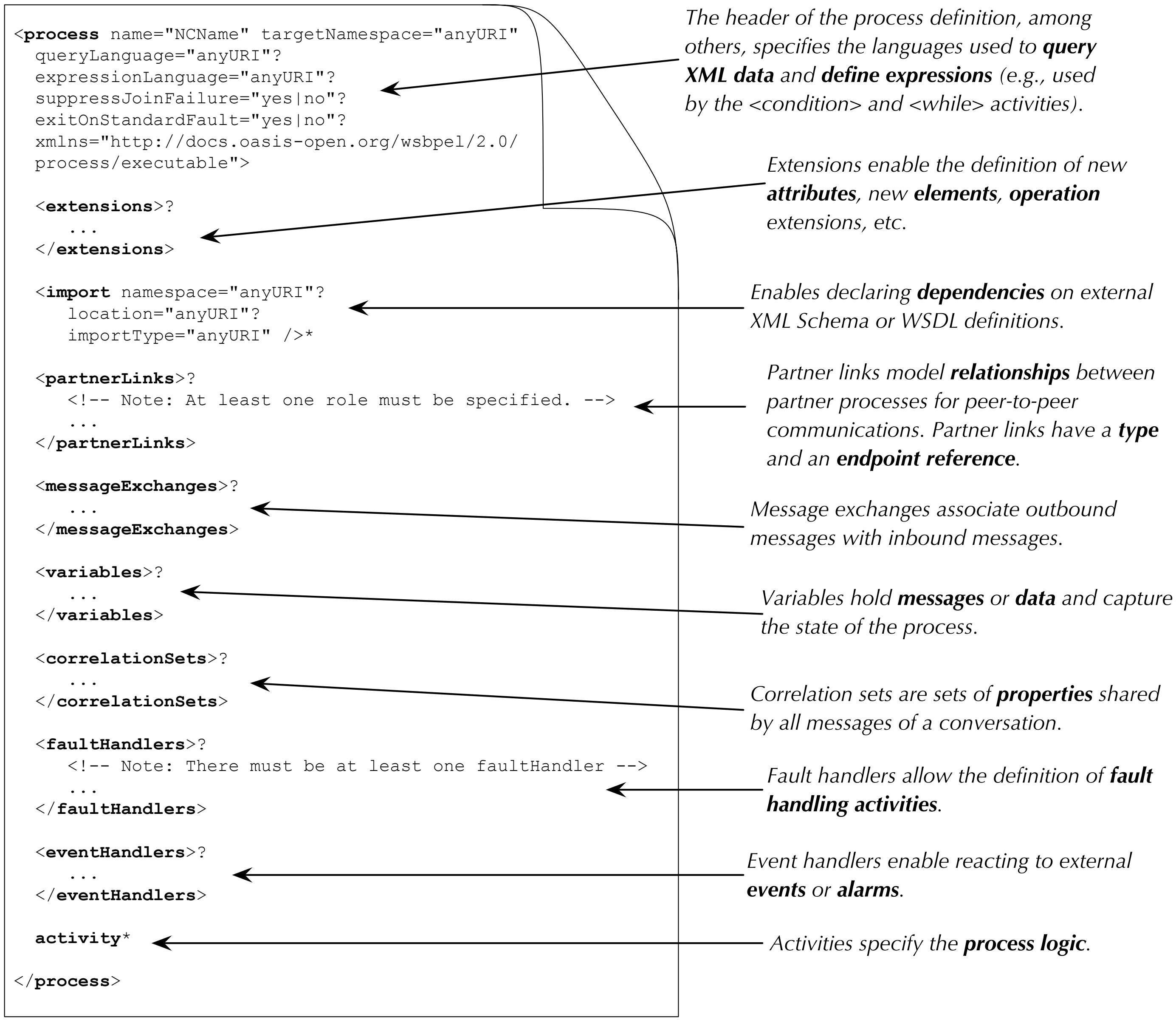


Fig. 2.8 The basic structure of a service composition (a process) in BPEL [163].

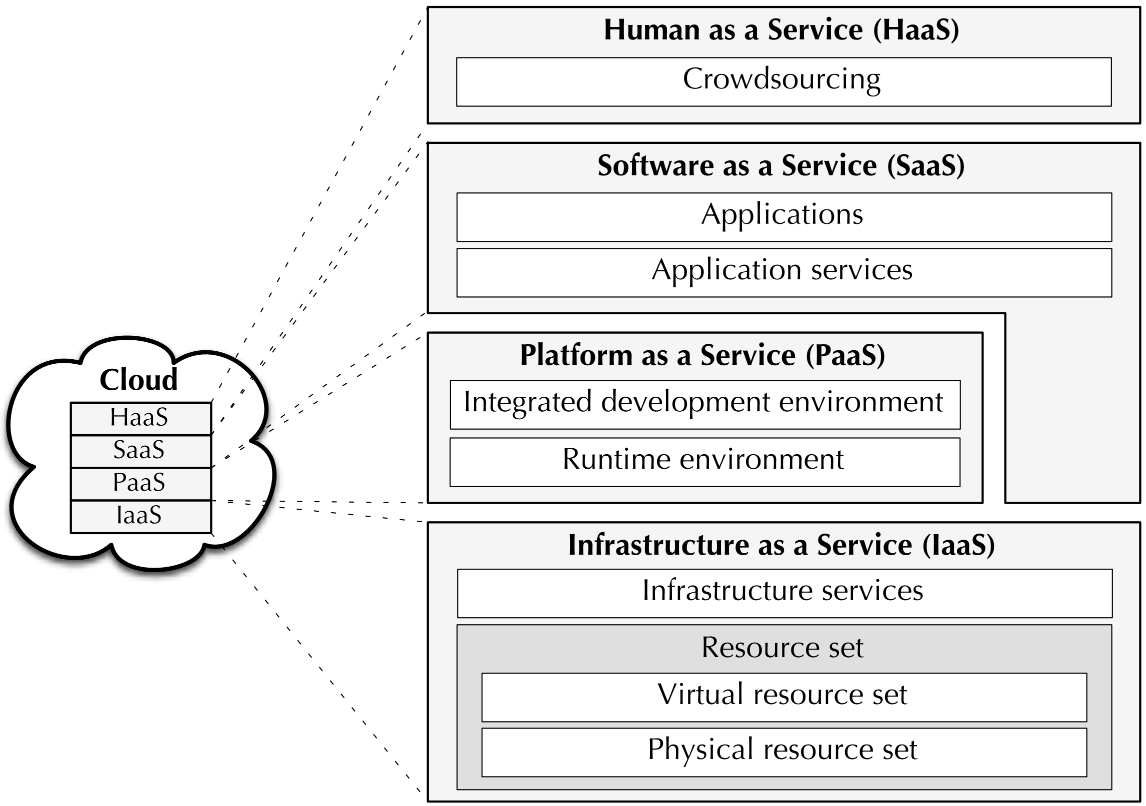


Fig. 2.9 A simplified cloud architecture stack with IaaS, PaaS, SaaS, and HaaS (adapted from [172]).