

## 2.2 Overview of a BPMN Orchestrator Diagram

Business Process Model and Notation (BPMN) could be adopted to model the microservice orchestration center. BPMN is a standard for business process modeling that provides a graphical notation for specifying business processes in a Business Process Diagram (BPD), based on a flowcharting technique very similar to activity diagrams from Unified Modeling Language (UML) [23].

The primary goal of BPMN is to provide a standard notation readily understandable by all business stakeholders [23]. These include the business analysts who create and refine the processes, the technical developers responsible for implementing them, and the business managers who monitor and manage them [23].

The main elements of BPMN diagram are activities, gateways, data, participants, and artifacts; it can be seen in Figure 1. The pool can be used to simplify a process description. For example, the complex business process of Amazon fulfillment, shown in Figure 2, is divided into 4 pools, of which each represent a distinct process and communicate with other through message passing mechanism. A pool contains one or more lanes used to assign responsibility for tasks or subprocesses to task managers. A pool can be treated as an orchestration center dynamically [24] and used to model a Business Process Center (BPC), a microservice orchestration center. Using one of the BPMN good practice [26], the microservices in BPC's model could be represented as collapsed pools since it concerned with their communication, not their detailed process, e.g., figure 3.

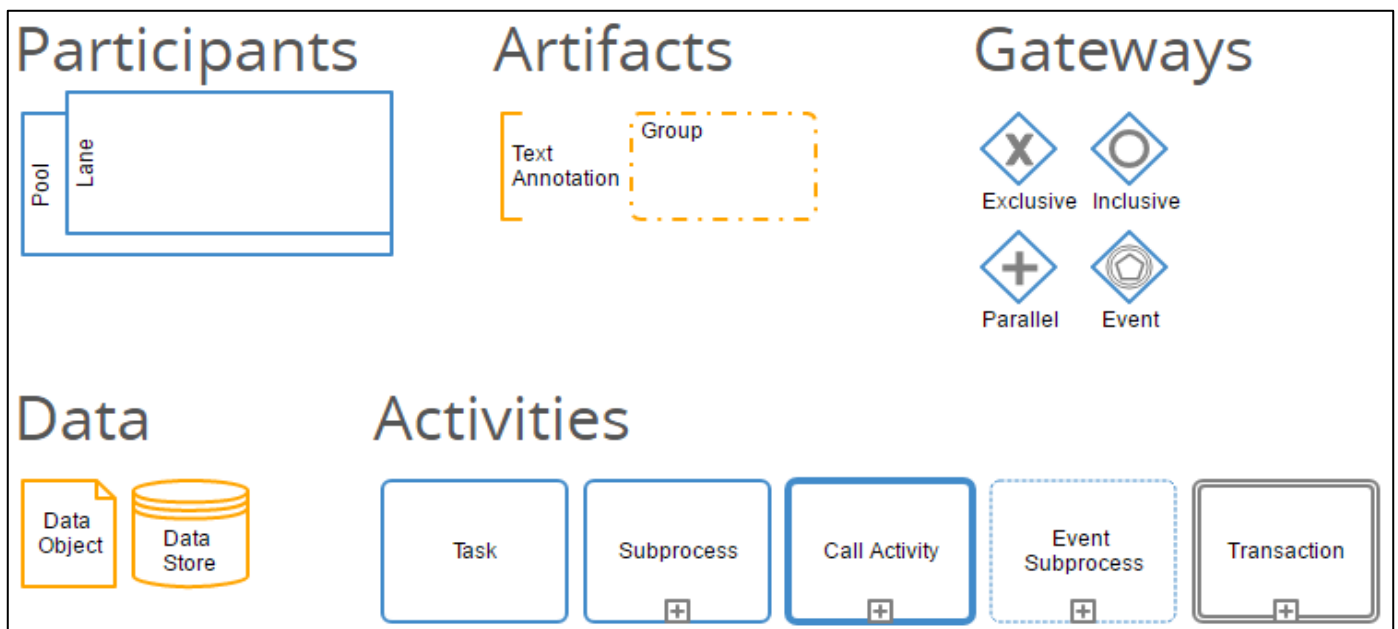


Figure 1 Element of BPMN diagrams [24]

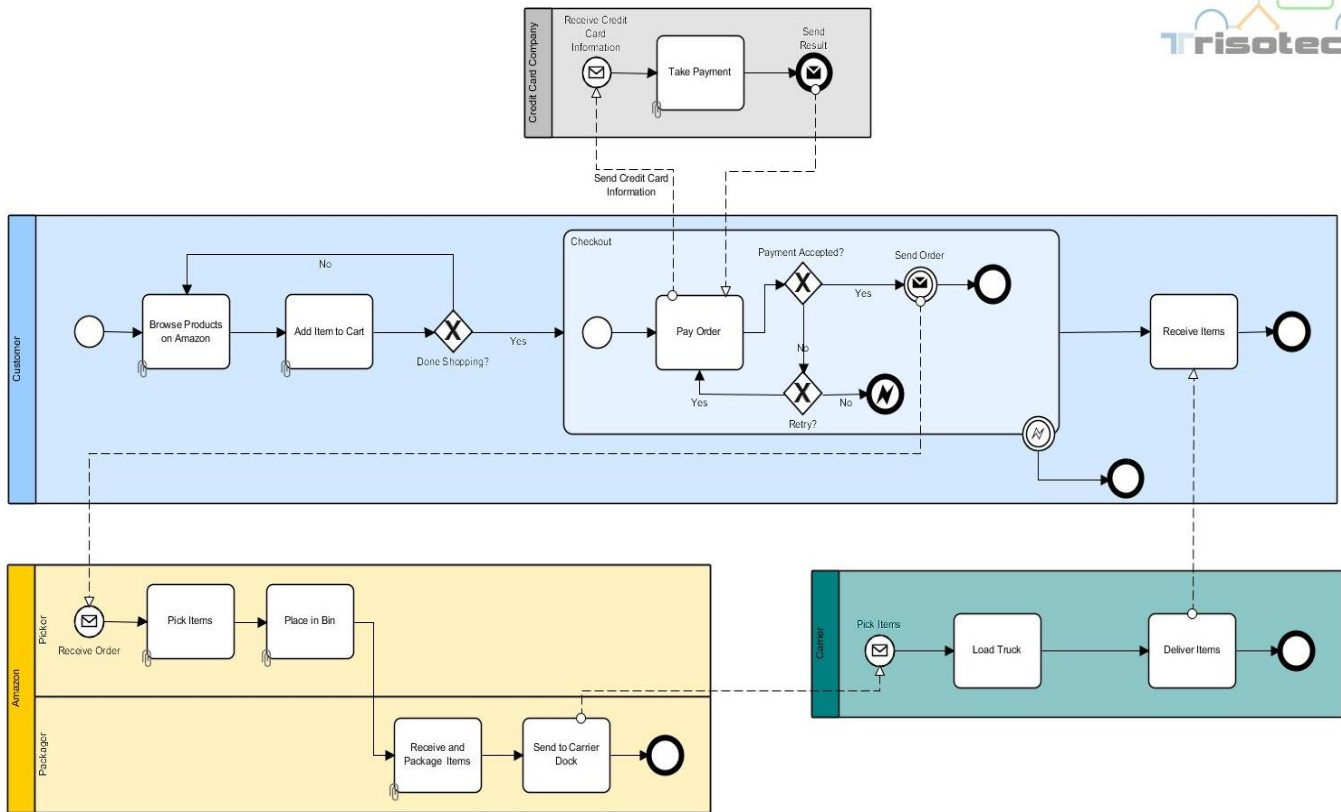


Figure 2 Example of BPMN for Amazon fulfillment [25]

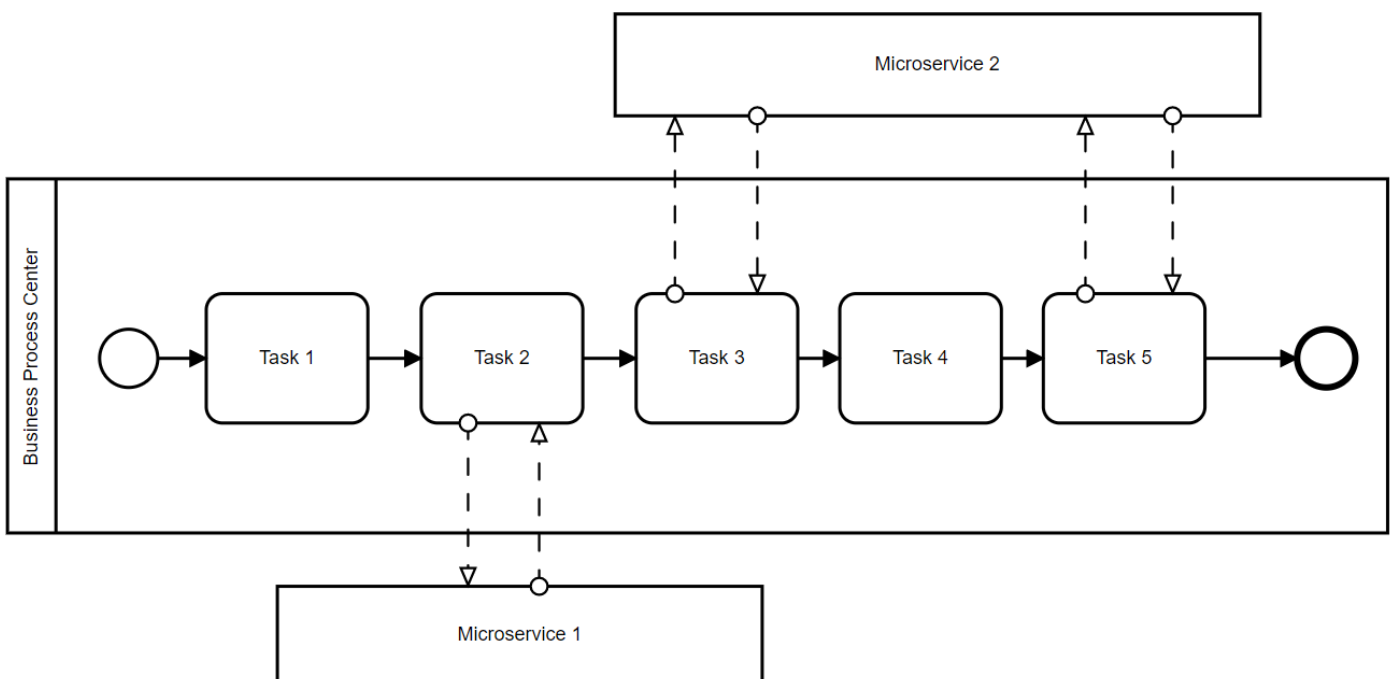


Figure 3 Example of Business Process Center Model