

2 Terms and Definitions

It is quality rather than quantity that matters.

— *Lucius Annaeus Seneca, ca. 4 BC–AD 65* —

Part I of this book addresses a comprehensive understanding of business process quality. Before describing a business process quality model in Chapter 3, this chapter introduces the basic terminology and definitions related to business processes and information systems.

The concept of *business process* gained increasing importance since organizations begun to redesign and optimize their processes in the early 1990s. A variety of definitions for the term BP were presented in the past decades. Some definitions refer to the components of a BP, such as activities, inputs, and outputs. According to [Hammer & Champy (1993)], a BP is “a collection of activities that takes one or more kinds of input and creates an output that is of value to the customer”. [Davenport & Short (1990)] define a BP as “a structured set of activities designed to produce a specified output for a particular customer or market”. Other definitions also consider the organizational context of the BP. According to [Weske (2007)], a BP “consists of a set of activities that are performed in coordination in an organizational and technical environment”. This definition is similar to the established definition by the Workflow Management Coalition (WMC). A BP is a “set of one or more linked activities which collectively realize a business objective or policy goal, normally within the context of an organizational structure defining functional roles and relationships” [WMC (1999)].

This book builds upon the definition of WMC, where the quality of BP components, as well as the organizational environment of the BP, is considered. In analogy to [WMC (1999)], an *activity* is a “piece of work that forms one logical step within a process”. Manual and automated parts of an activity are not clearly distinguished in [WMC (1999)]. In contrast to

[WMC (1999)], we do not use the term activity to refer to the smallest unit of work, but introduce the term *step*. Each activity within the BP is composed of a set of linked steps and (sub-)activities, meaning that activities can be hierarchically nested. Steps are either performed completely by a human actor – called *actor steps* – or are performed completely by an IS – called *system steps*.

Each BP is located within an *organizational environment*. An organizational environment comprises the *human actors* in their *organizational roles*, as well as *passive organizational resources*. A *human actor* (hereafter also referred to as actor) is an organizational resource who actively performs actor steps. An organizational role (hereafter also referred to as role) is a grouping of actors “exhibiting a specific set of attributes, qualifications and/or skills” [WMC (1999)]. It is an abstraction of competencies [Caetano et al. (2007)] and properties of concrete actors. Passive organizational resources are non-IT devices or machines, such as a fork-lift. They are required to perform an actor step, but do not actively process the step.

ISs are an enabler of BP redesign and optimization [Davenport (1993)]. They play a critical role in BP innovation, by providing new technology and automation. Therefore, ISs can improve BP efficiency, or enhance their effectiveness and reliability [Mooney et al. (1996)]. However, ISs can also influence BP quality negatively, for example, by hampering actors to execute activities of the BP. A detailed discussion of the mutual impact between ISs and BPs in terms of performance is given in Chapter 7. Consequently, the quality of ISs is considered as an influence factor of BP quality in this book.

According to [O’Brien & Marakas (2010)], an *information system* consists of five basic component types:

- Hardware components, which comprehend all the physical devices of the IS.
- Software components, which comprise all the programs and procedures.
- Data, which includes all the knowledge in the IS.
- Networks, which comprise all the communication channels.
- People, which cover IS specialists and end-users.

In this book, an IS only comprises the four non-human component types, since people are part of the organizational environment.

In modern IS landscapes, where ISs are distributed across several hardware nodes, it is often difficult to distinguish one IS from another. In the context of this book, all the components that interact with each other, either directly or via other components, are part of the same IS. Components that do not interact with each other are part of different ISs.

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Heinrich, R.

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