

1 Introduction

In light of a broad variety and further development of product portfolio management since its invention 1952¹ as statistically supported portfolio decision making tool, it appears reasonable and useful to provide an overview of the different developments since then and to draw a picture of the latest status of portfolio management in academic literature.

In order to do so basics and definitions are provided in section 2. The following section depicts the evolution of portfolio management approaches and tools. This section also groups the broad variety of approaches and tools in order to get clearer picture and to improve the understanding in the context of economic academia over time. Depending on the economic era – classical, neo-classical and modern – the approaches vary from more market- or resource based approaches (dominating the classical and neo-classical era) to the more modern approach based upon value. Next to a general overview this paper focuses the management of product portfolios specifically rather than the management of strategic business units or corporate investments. Next to the distinction regarding the object of investigation (business units/strategic investments versus individual products) it is useful to allocate portfolio management tools alongside a generic managerial process (diagnosis, options generation, selection, implementation and controlling) in order to get a better understanding. A huge number of tools are focussing very much the diagnosis and offer generic courses of action (such as the famous BCG matrix) where as a much lesser number of tools have the managerial process in scope (such as Wendt's portfolio management process concept). For each of these groups prominent examples are described in more detail in section 4 and 5. The summary section number 6 will conclude the findings.

2 Definitions and Basics of Product Portfolio Management

In a generic and pretty abstract sense a **product** is a physical good or a service that carries value for an individual or an organization and thus can be subject to market transactions.² The most important criterion to distinguish a product from an individual/stand-alone solution

¹ Markowitz (1952)

² Pepels (2013), p. 1. In this paper the terms product and service are used synonymously.

is repeatability.³ A product is designed to satisfy the needs of *numerous* users with similar needs (“the market”) whereas an individual solution serves “just” the specific needs of *one* customer. In simple words “lot size 1 = individual/stand-alone solution”, “lot size n = product”. Consequently, the observation horizon is much longer for a product in most cases.⁴ In this sense a project (approach) or a service can also be a product depending on the ability to serve multiple customers. For example, a project (methodology/approach) to develop an IT-system is a product once it is used for many customers. The same applies to pre-configured/standardized services such as application management for certain software packages.⁵

Although the definition of “product” seems quite intuitive it can be very difficult in practise to exactly differentiate what the actual product is. In dynamic markets like the information technology (IT) or communication technology (TC) market for example new products or variants are introduced quickly. Some products are offered directly to the market and at the same time as part of a combined product or service. Sometimes, one and the same product or service is offered with a different branding and accordingly a different tariff structure. In practise this leads to different approaches how to differentiate products. For example, one could define a product by the customer’s perception: A product is what the customer perceives as a product (customer-oriented classification). Or the outcome of a specific production process is defined as “product” (production-oriented classification). Or – very pragmatic – a product is what has its own ERP product number.⁶

Product portfolio shall be defined as a combination or conglomerate of different but comparable products that are jointly investigated and interrelated with each other.⁷ According to Amelingmeyer this paper uses the term **product portfolio management** as the systematic and consolidated view of all products of a company (the product portfolio) in order to plan, prioritise, select, coordinate and control them. Thus, product portfolio

³ There are numerous other product classifications in the literature. Details can be found e.g. in Pepels (2013), Grimm, Schuler, Wilhelmer (2014) or Herrmann, Huber (2013)

⁴ Grimm, Schuller, Wilhelmer (2014), p. 5 et seq.

⁵ See Herzwurm (2009), p. 27 et seq.

⁶ Amelingmeyer (2009), p. 5 et seq. or Schepp, Herold, Schmahl (2009), p. 128 et seq.

⁷ Wendt (2013), p. 99. A study amongst 500 enterprises in Germany showed that 3 out of 4 companies use the portfolio analyses to plan and steer their business (see Packmor (2009), p. 65)

management has to be established along the dimensions strategy, organization, processes and controlling in order to be successful.⁸ As the next section will show in more detail product portfolio management is dealt with in literature often more or less as a pure analytical tool with the advantage to especially display a portfolio in an intuitive and clear way (often using an internal and an external dimension displayed in a 2-dimensional matrix).⁹ Especially, the portfolio matrices well known, like for example the “BCG-matrix” are common and very popular analytical tools.¹⁰ In addition, in this paper product portfolio management is also understood as a management *process* in order to constantly (re-) evaluate existing products or products currently being introduced, evaluate and prioritize new product options and to phase-out non-performing products.¹¹ Thus, the main characteristics of product portfolio management is to base all analyses, decisions, measures, processes etc. on a simultaneous investigation of the whole product portfolio and NOT to look at single products “in isolation”.¹²

Due to its broad application portfolio management is dealt with in numerous disciplines of economics, foremost in strategic management¹³, product management¹⁴, marketing¹⁵ and finance.

⁸ Amelingmeyer (2009), p. 7 et seq.

⁹ See e.g. Pepels (2013), p. 530 et seq.

¹⁰ Wendt (2013), p. 96

¹¹ Wendt (2013): Wendt applies the 5 phases of a generic “strategic management process” (1. Strategic Diagnosis, 2. Creating Strategic Options, 3. Strategy Selection, 4. Strategy Implementation, 5. Strategic Control) to the product portfolio of a company. (see Wendt (2013), p. 81 et seq. For a very similar very pragmatic definition see also Schepp, Herold, Schmahl (2009), p. 130

¹² Regarding this understanding see e.g. Landauer (2013), p. 6

¹³ Strategic management mostly uses portfolio management as a tool to evaluate and plan strategic options within product-market scenarios (see e.g. Hahn (2006), p. 218 or Macharzina, Wolf (2010), p. 247)

¹⁴ Product management is focusing more the single product or service in contrast to portfolio management looking at all products simultaneously. However, there is an overlapping area. Most authors of product management descriptions look at the sum of all products, too. Normally, they do not use the term “portfolio” but “product programme” or “product palette” (see e.g. Hermann, Huber (2013), p. 1, Pepels (2013), p. 429 et seq.)

¹⁵ Devinney, Stewart, Stocker (1985), p. 110