Effectively Using Systems Thinking in New Product Development (NPD)

Brian J. Galli, Long Island University, Brookville, USA

ABSTRACT

This is a case study concerning technology start-up companies involved in systems thinking during new product development. It is found that systems thinking are pivotal to assist project managers to move a project from start to successful completion. The essence of systems thinking is getting all teams in a company to work together, as one, to push forward new product development. The study reveals some of the challenges associated with implementing the systems theory in new product development for these companies. This area of study holds promise for continued future research. However, there are still some implementation issues in the real world that have been identified and perhaps are in need of further exploration.

KEYWORDS
Systems thinking, systems theory, new product development, project management, team environment

INTRODUCTION

It is well known that products and services have a life cycle. As the market develops over time, products and services can weaken or become obsolete. Some products and/or services cannot adapt to such a constantly advancing market (Caldwell, 2012). However, the inability to adapt allows companies and industries around the world to have new opportunities to redesign existing offerings and to create brand new offerings to stay competitive in the marketplace. Product development teams are aware that new and innovative ideas are essential to staying relevant within the marketplace. Product development, which is known as “new product development (NPD)” to entrepreneurs, relies on processes that design, create, and support a product throughout its lifecycle.

Today, New Product Development (NPD) is fundamental not only for a company’s survival, but also for its ability to gain a competitive advantage. The process benefits many aspects of an organization, such as its cultural environment. Furthermore, New Product Development projects can benefit a company and its customers from raw materials to final distribution, as well as all areas of a supply chain and logistics. Therefore, new product development needs to be discussed from a systems perspective in terms of logistics and supply chain.

Logistics is defined as the itemized association and implementation of a multifaceted operation, but in general marketing, it is the management of what is between the origin point and the utilization purpose whilst aiming to meet prerequisites by pursuing the goal (Galli, 2017a). Physical things can be applied to the assets that are supervised in logistics. For example, food, drinks, materials, time, creatures, and data are all physical things. These also include resolving the data stream, which features security, looking after content, bundling, generation, warehousing, and transportation.

Systems thinking addresses how various roles, disciplines, and systems are interconnected, as this system is based on how parts work collectively. Thus, systems thinking focuses on the integrated

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whole, so it easily fits into new product development because a project manager can more easily see the process of product development from a systems perspective. In other words, the product development would be viewed as multiple parts merging to create innovation and expansion. A project manager must work with different teams to lead a product through the different phases of concept, market, and operations. So, a project manager should be able to see every aspect from a systems thinking perspective, as it seems natural for this role to entail systems thinking.

Not much literature is available on how systems thinking and new product development relate, but both subjects have their own significant amount of literature. It is detrimental to businesses that the connection between systems thinking and new product development has not yet been explored. New product development is necessary for most companies to exploit market opportunities, to drive growth, and to drive profitability. One cannot only study new product development in reference to project management or innovation studies, as systems thinking is capable of being utilized to a larger extent than it has been (Galli, 2017a).

The focus of this research will be how systems thinking works within new product development. However, this study will also discover ways of applying systems thinking to new product development in the future. Primarily, there will be a focus on a case study, which features a software company that is developing a new product. Due to confidentiality reasons, we cannot divulge the name of the company or product, but it can be said that this is only the company’s second product. Though the company’s first product was extremely successful, it did not have a process, but this second product has the company considering a process. As a result, this has the potential to be a good case study about how companies approach systems thinking today. Most importantly, we can find if systems thinking will be more frequently applied in the future development of this product and the process behind it (Galli & Kaviani, 2017a).

**Topic Background**

Systems thinking have been described as a management discipline “concerning an understanding of a system by examining the linkages and interactions between the components that comprise the entirety of that defined system” (Institute for Systemic Leadership, 2017). This would seem to make systems thinking a natural fit for project management of all types, including the development and launch of new products. Where traditional management sees a company as a set of individual departments, each doing their own thing, systems thinking takes the view that the company is a system, and all departments are integrated into one.

New product development focuses on a couple of things. First, the identification of new product opportunities, and second, developing products to exploit those opportunities. If the traditional view of management were applied to new product development, there would be a department focused on identifying opportunities, then another that might design and build the product, and another team to market it. If marketing and sales work with each other, that alone would be considered a victory. New product development can occur just within the development team, which then passes it along to marketing to sell it. There are a lot of problems inherent in taking the view of the company as a set of individual departments. Systems thinking can and should play a critical role in new product development (Galli, 2017b).

The links between systems thinking and new product development appears to be underdeveloped. The reality is that there is a lot of room for systems thinking to be incorporated into new product development (Galli, 2018a).

**Research Objective**

This study aims to illustrate how systems thinking and tools of systems thinking can provide benefits for a business’ methods behind developing a new product. Applying systems thinking to new product development can increase product quality and marketability, which can lead to better outcomes for businesses. Systems thinking can provide improved success rates compared to new products that are
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