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Strategy, uncertainty and the focused factory in international process manufacturing

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Abstract

The extant literature on the focused factory has not explored the contingencies associated with the de facto adoption and use of focused factory principles: Why are some plants focused while others are not? Is focus—or unfocus—a strategic choice, best practice or perhaps a reflection of an environmental constraint? In his pioneering work, Skinner [W. Skinner, 1974. The focused factory. Harvard Business Review 52 (3), 113–121] prescribes companies to ensure that the manufacturing task of their manufacturing units is simple and focused, for instance, by assigning a narrow product mix for each factory or concentrating on a narrow mix of production technologies. Especially in the absence of compelling empirical evidence on the effectiveness of the focused factory approach, we argue that we still do not understand why some plants may remain unfocused.

We observe that in the international process industry case examined in this paper, some factories are unfocused and their manufacturing tasks are all but simple. Yet, some of them appear to be high performers. This presents an opportunity to seek empirical insight on the questions raised above. Specifically, we examine why manufacturing companies in the process industries may or may not follow the focused factory strategy. Our results suggest that in certain operating environments and with certain competitive strategies, choosing not to focus the manufacturing task should be viewed as a viable alternative manufacturing strategy, perhaps even a constraint imposed by the operating environment. We develop four contingency propositions to explain why focused manufacturing strategy may not be desirable or even possible.
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1. Introduction

The contention in this paper is that even though we have talked about the *focused factory* for 35 years (Hayes et al., 2005; Skinner, 1969), we still do not adequately understand its application in the industry (e.g., Skinner, 1996). Our goal is to build through an international case study an understanding of why factories in the process industries may or may not be focused. In so doing, we seek insight that explains the real-life phenomenon, and for this purpose the

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case study is the appropriate approach (Meredith, 1998, p. 442). The key question we seek to answer is: ''Under what kinds of business environmental and strategic circumstances are focused manufacturing strategies viable in the process industries?'' Specifically, we examine the effects of competitive business strategy, uncertainty in the operating environment, and production technology and how they affect manufacturing strategies in the process industry.

1.1. Focused factory in the extant literature

Discussion on the focused factory started in 1969, when Skinner (1969, p. 137) described in his seminal paper an electronics manufacturer that served a heterogeneous customer base in three industries. The three customers had different expectations: one emphasized low costs, the second product reliability, and the third fast new product introduction. Yet, the company had decided to serve all markets from a single factory. This, Skinner argued, was an unfocused factory par excellence, which from a normative point of view is bad manufacturing strategy. Skinner (1969, p. 137) further pointed out that the company in his example was trying to reap in economies of scale (or perhaps more appropriately economies of *scope*, see Panzar and Willig, 1981) by serving multiple markets from a single factory. But is this all there is to it? Do companies really make seemingly bad policy decisions in attempts to economize on scale or scope? Is it still the case 35 years later, and in countries other than the U.S.? Is focus unconditionally good manufacturing policy? Instead of assuming this to be the case, we submit it to research as an open empirical question.

Skinner's example is neither an isolated event nor merely an historical anecdote: time and again, we witness that some factories remain unfocused in the sense that they try to achieve multiple goals at the same time (Boyer et al., 1996; Ketokivi and Schroeder, 2004) and produce a wide variety of different products for heterogeneous markets. Indeed, Skinner himself concluded based on empirical evidence from the 1960s and 1970s that ''focused manufacturing plants are surprisingly rare'' (Skinner, 1974, p. 114). In a more recent study, Vokurka and Davis (2000) provide large-sample evidence by observing that 78 of the plants in their sample of 305 plants were unfocused.[1] They also make an interesting observation, which is relevant to this study: the ratio of focused to non-focused plants varies by industry; plants in typical process industries (chemicals, paper, primary metals) tend to be more focused (78% of factories were focused) than discrete-part manufacturers (machinery 58%, electronics 61%). Collins et al. (1998), in turn, observe that there are some country differences in the adoption of their *rigid flexibility model*, a derivative of Skinner's focused factory. Extant theoretical and empirical work on focus does not explain these country and industry effects, or the antecedents of focus in general.

While focused factories have been empirically examined from a content (e.g., Berry et al., 1991; Bozarth, 1993; Pesch, 1996; Pesch and Schroeder, 1996) and especially performance perspectives (Bozarth and Edwards, 1997; Brush and Karnani, 1996; New and Szwejczewski, 1995; Safizadeh et al., 1996), these studies have not sought an understanding of why plants are or are not focused. Also, Vokurka and Davis (2000, p. 44) appropriately point out that ''[l]ittle empirical support has been provided for the focused factory concept''. This observation in particular warrants more theoretical reflection and perhaps alternative theoretical formulations and empirical analyses.

One interpretation of the lack of empirical support for the focused factory is that focused factory is not always the best strategy. Indeed, a careful reading of Skinner's seminal work suggests that focused factories are only possible strategy: ''*One way to compete* is to focus the entire manufacturing system on a limited task precisely defined by the company's competitive strategy . . .'' (Skinner, 1974, p. 119, emphasis added). Other scholars have explicitly argued that factories can be unfocused, but still be high performers (Hayes and Pisano, 1994, p. 81). Apparently, unfocus could be an intentional strategic choice, or perhaps a choice that reflects the specific requirements of the business environment: especially uncertain and fast-changing business environments may require the use of less focused and specialized strategies. Indeed, one of the central arguments in the population ecology literature

[1] Vokurka and Davis (2000) used Skinner's original definition of focused factory, which is also adopted in this paper.

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