

Innovation 4.0 and Smart Product Line Pivots

“If you want something new... stop doing something old.” – Peter Drucker

Germans declare it Industrie 4.0. The Yanks tag it as *The Connected Enterprise*. And the Brit's give it the *4th Industrial Revolution* moniker. Any way you slice it, it's the future.

The product development community, especially those in large organizations, don't seem as caught up in a name. I've seen **Innovation 2.0, 3.0, and 4.0** label the change. My preference is Innovation 4.0 because it matches the title dating back several centuries. Regardless of its name, it's an enormous wave of practices, processes, and technologies. Consider a few key drivers: factory automation, design thinking, IoT, cloud computing, systems engineering, Jobs-to-be-Doneⁱ, AI, and integration-enabled product developmentⁱⁱ. With software tools and methods, these drivers create a powerful force that changes how we work, the innovations we create, and the customer needs we satisfy.

The Innovation 4.0 wave is real, and it's powerful. Big companies can either figure out how to ride this wave or prepare their out-of-business sign. Their challenge, though, is to avoid diving in with little understanding. The job isn't about digitizing old practices and directing managers to think up new offerings. It calls for setting up new work methods, creating new customer relationships, and developing new offerings with new technologies. In strategy terms, the job demands superb execution of smart product line pivots. Let me explain why this is important.

Innovation 4.0

The Innovation 4.0 challenge is vast. Consider what it means to companies that make tangible products. Most have product lines based on designs, assembly, and materials. Organizational structures, supply chains, talents, and processes match this. But in the Innovation 4.0 wave, these same firms must embrace software, external platforms, and new customer interfaces. To succeed,

waterfall project management must live alongside agile practices, design engineering must combine with systems engineering and design thinking, while the traditional voice of the customer approach must advance toward Jobs-to-be-Done analytics.

The same change is true for food products, consumer goods, and services. Branding has grown to include social media messaging. Algorithms and AI have become the backbone of services. Consumer packaging has morphed with sustainability technologies and life-cycle management. And you'll see technologies, factory automation, and distribution channels advance to meet needs within increasingly finely defined market segments. Keeping one's head about all of this is itself a major task. And because many changes don't happen overnight, the transformation may seem never-ending.

The core of the change is the match between your offering and each customer's needs. This is fundamental. The only reason for embracing Innovation 4.0 is to assure better customer satisfaction. Screw this up, and customers will walk away. Screw this up, and you'll lose your business. But the offering must change as the customers and their needs change. And that's why understanding product line pivots is so important.

Product line pivots are notable changes to the core of a product line strategy. Innovation 4.0 is central to product lines because it has a major impact on the three parts that combine to create this core. The size of the impact makes the tie between Innovation 4.0 and product line strategy be crucial to a business's well-being. The big insight is that smart pivot execution should lead an organization's Innovation 4.0 changes. Moving forward with Innovation 4.0 and little understanding about its impact on your product lines is a path to big problems.

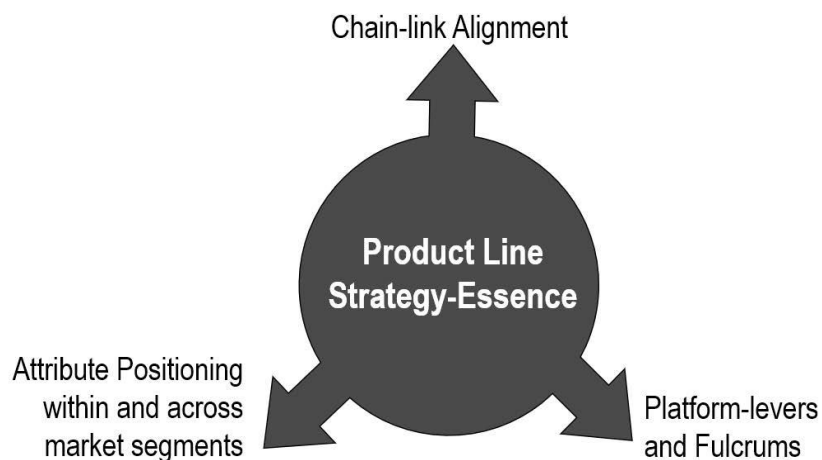


Figure 1 Strategy-Essence: The core of a product line strategy has three parts. In good strategies, each is strong. In great strategies, the parts work in unison and boosts one another.

The Strategy Core

I call the core of a product line strategy the **Strategy-Essence**. It's three parts are 1) attribute positioning, 2) platform leverage, and 3) cross-functional alignment. See Figure 1. You can read much more about the Strategy-Essence and its three parts [here](#). And in Table 1, I lay out how the Innovation 4.0 wave affects each part. Changing one part is a major strategic move for most product lines. Changing all Strategy-Essence parts, however, elevates the change to be a notable pivot for any product line.

Table 1. Strategy-Essence Parts and Innovation 4.0

Strategy-Essence Part:	Attribute Positioning	Platform Leverage	Cross-Functional Alignment
What it is	Product line offerings serve customers with different needs and at different price points. Need segmentation and attribute division is key to successful positioning.	This is a common factor that cuts across products to enable faster development and better economies to performance and quality. There are many types of platform-levers.	In strategy terms, this is called ‘Chain-link’ alignment. Product line strategy is one link. IT and other link must align to form a business strategy chain. Misalignment degrade product line effectiveness
How Innovation 4.0 impacts the part	JTBD ⁱⁱⁱ segmentation becomes more finely defined.. This is driven by real-time product use and consumer choice data. Often service attributes push to be tangible, and vice versa.	Platform-levers and their types may change. Organization structure, processes, methods, and support systems change how product lines gain leverage.	Each functional link boosts its own performance through IT, AI, and big data analytics. These changes also affect how the functions connect and work with one another, and help boost the product line.
Impact on other Strategy-Essence parts	Sales and distribution must align with the segmentation. Platform-levers must drive products across segments. Cross-functional data analytics can better define segments	New platform-levers enable new attributes and new positioning. New platform-levers also require new support from different functions. Skills and organizational structures may change.	New capabilities in non-product functions can enable platform possibilities and new attributes. Innovations can cut across chain-links to create value previously impossible to achieve.

Good product line strategies carry out the three Strategy-Essence parts in unison. The purpose is to boost the impact of the whole — one part amplifies the others. Should the parts fall out of unison, the line’s impact will decline. A problem happens when Innovation 4.0 causes a change that inadvertently hurts the Strategy-Essence. The unison can be lost. That’s why understanding the tie between Innovation 4.0 and product line strategy is important. The job is to make sure Innovation 4.0 advances with, not separate from, the three Strategy-Essence parts. And because a change to the Strategy-Essence is the definition of a pivot, Innovation 4.0 advancements and product line pivots go hand-in-hand.

Smart product line pivots should lead the Innovation 4.0 changes. Don’t fall into the trap of thinking Innovation 4.0 won’t affect your product line. One way or another, the Innovation 4.0 wave will cause your product line to change. It’s best to proactively drive the change, not reactively respond to it.

Should a colleague or someone else suggest you move forward with an Innovation transformation, ask yourself if it involves a product line pivot. Get prepared, though. They may not understand why the question is important.

Call to action

Companies and their product line teams must learn product line strategy from a holistic view. This differs from the expert view teams have in the trenches of day-to-day operations. A complete strategy view opens possibilities that challenge the norms. And it's the Innovation 4.0 wave, not just one tool or approach, that enables these possibilities.



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ⁱ Job-To-Be-Done is a smart approach toward understanding customer wants and needs. Kudos to Tony Ulwick and Harvard Professor Clayton Christensen their work with JTBD.

ⁱⁱ My first article on Integration-enabled product development was in 2004 while engaged by SAP.

ⁱⁱⁱ JTBD is an acronym for Job-To-Be-Done