# Innostructure: The need for corporate infrastructure supporting innovation

RON FULBRIGHT
University of South Carolina Upstate, Spartanburg, SC

This article introduces the concept of "innostructure" and explains why it is a critical component for the enterprises of the near future. Innostructure is the collective name given to the set of tools, services, processes, and culture supporting innovative and creative thinking in an enterprise. To maintain competitive advantage in the new globalized economy, companies must be able to quickly adapt by continual and sustained innovation to stay ahead of the competition. The monolithic research and development departments of the past represent a business structure that is too sluggish. The answer is to distribute innovation throughout the entire enterprise permeating every job function and business practice. The value proposition is that a company's innostructure provides a way to leverage the collective innovative ability of the entire enterprise. The power of this leads us to predict that, in the near future, every business will have to have an infrastructure supporting ubiquitous and pervasive innovation in order to be considered a viable participant in the global economy.

## 1. INTRODUCTION

An enterprise can be viewed as a collection of *infrastructures*. For example, the information technology (IT) infrastructure of a company today is easy to identify and recognize as a fundamental business component. However, just a few years ago, no one knew what IT was, much less thought of it as a business requirement. As technology, markets, culture, and society change and evolve, what used to be in the realm of the unknown becomes the indispensable of tomorrow. IT infrastructure is an example of something that has been added to the business lexicon in recent years. We are now at a flex point in history after which a new type of infrastructure is going to be required—the innovation infrastructure, or as we call it, the *innostructure.* In the near future, companies will be required to have tools, services, procedures, and the corporate culture in place to foster an enterprise-wide commitment to innovative business practices. We predict that spending on innostructure will rapidly increase and the businesses of the future will look back on companies today and wonder how they ever got along without the proper innostructure.

## 2. WHY COMPANIES MUST INNOVATE

In Fulbright and Routh's model[1], called the *Vendible Model*, enterprises are modeled on the basis of the amount of resources produced internally versus the amount of resources purchased from external entities. Visualized as shown in Figure 1, the *vendible*

[1] "The Vendible Model: Visualizing the Impact of Alternative Sourcing," in progress.

*line* defines the boundary between internally sourced resources, the strategic regime, and externally sourced resources, the commodity regime.

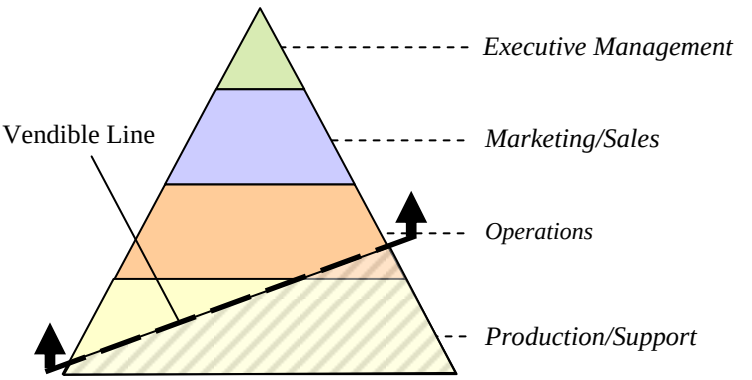


**Figure 1.** The Vendible Model depicts the *vendible line* as partitioning an enterprise into a set of internally sourced resources, called the *strategic regime* (above the line), and a part that is externally sourced, called the *commodity regime* (below the line).

Resources of higher strategic value are depicted near the peak and the resources with lower strategic value are near the base. In general, the lower-valued resources get outsourced quicker than the higher-valued resources. This causes the vendible line to sweep upward as commoditization consumes more and more of the enterprise. However, the vendible line never reaches the top because if it did the enterprise would cease to exist (the entire enterprise would have been outsourced). On the other hand, the vendible line never reaches the bottom because no enterprise produces every single resource that it needs. Even the smallest company buys something from a supplier be it paperclips, electricity, water, or any of several other commodities. Vendible model analysis shows us something important about enterprises: there is a set of resources in any enterprise that will never be outsourced. That core set of resources is called the *strategic kernel* and represents the very essence of the enterprise itself.

But what is contained in the strategic kernel? To answer that, we must first recall the definition of *commodity* as being a good or service that is traded primarily on the basis of price, and not on differences in quality or features. In other words, commodities are those things that are decidedly *not unique*. Since non-unique resources become commodities and fall below the vendible line, what remains in the enterprise are the resources that *make the enterprise unique*. The way any enterprise stays unique is to do something that

no other enterprise is doing or can do and that is the very definition of *innovation*. Companies must innovate to stay ahead of the competition.

The notion that companies must innovate to maintain competitive advantage is not a new notion. Leading companies in every industry invest substantial amounts of time and money in research and development departments. However, what is new is *how* companies will innovate in the future.

## 3. WHY COMPANIES MUST BUILD INNOVATION INFRASTRUCTURES

Globalization is leveling the playing field and allowing companies all over the world to compete in previously inaccessible markets. Companies are competing against a larger and more diverse group of competitors than ever before. However, something else is happening that is even more important. The time required for the concept-to-product cycle is getting shorter. A few decades ago a company's new innovation could put it several years ahead of its competition. By the end of the millennium, this lead time had shortened to several months. Globalization, communication technology, information technology, culture, social, and political forces are pushing us into the *knowledge* age where innovative lead time will be measured in weeks. The large monolithic research and development department is not likely to completely disappear in this new world, but such an entity is ill equipped to respond fast enough for the future marketplace. Companies that do not become leaner, more agile, and continually adaptable will lose out to those companies that do. Being able to *continually adapt* will require companies to distribute its capacity for innovation throughout the company.

To achieve this, a company's innovation quotient must be built into the fabric of the company itself, touching every job, every employee, every department, and every business practice. What we are describing here is the need for a new *infrastructure for innovation*, something we call the *innostructure.* Just like how the infusion of IT infrastructure into a company has turned every employee into an information worker, a company's innostructure will turn every employee into an *innovation worker*.

## 4. WHAT NEEDS TO BE IN THE INNOSTRUCTURE?

The innostructure, like every other infrastructure in a company, will consist of tools, technologies, services, processes, and practices made available to all employees and supported by the entire company. But what do we mean by "innovation" and what will this innovation infrastructure allow us to do? The innovation worker of the future will routinely employ skills including:

- Innovative Problem Solving
- Brainstorming
- Lateral and Alternative Thinking
- Situation Analysis
- Failure Determination
- Failure Analysis
- Creativity

Companies will seek to change everything they do to foster these skills and to employ innovation in everyday business processes. Tools in the innostructure will include a suite of desktop software applications empowering an employee. These tools will be integrated with common office applications like Microsoft Word, Excel, Powerpoint, Outlook, and Internet Explorer allowing every employee to innovate no matter what task they are performing. Such tools will enable everyone to be forward-looking thinkers, even those people who claim not to be creative or innovative.

There will also need to be a corporate culture change as there is with any change in business practice. We call this the *innoculture*. A new set of words and phrases will enter into daily conversation. Today, your fellow employee might say "Let's just rip it and burn a new CD, then drop a message on a few blogs pointing them to our intranet site"—a sentence that would be totally incomprehensible a decade ago before various new IT had been invented and entered the business and social mainstream. Tomorrow, after the innostructure and innoculture has taken root, that employee might say something like "while doing the ISQ, we identified a line of evolution but after applying some general and specialized operators to resolve the contradictions, we realized there were actually three different lines to follow two of which we can protect with a patent fence." Employees will have to think and speak in the innoculture jargon.

Finally, job duties and business processes will evolve. Today with pervasive distributed and networked information technology, the average employee is an *information worker* or a *knowledge worker*. New careers like information management and knowledge management have been created. Tomorrow, with pervasive innostructure, average workers will become *innovation workers* and new job titles like *innovation manager* and *evolution manager* will be created.

## 5. CONCLUSION

We have painted a vision of the future in which a new infrastructure, the innostructure, is a required component of every business. How can we be sure this will happen? Because it is already underway. Emerging and rapidly developing economies like China and India are producing a new breed of small, fast, and agile corporations custom designed to navigate the new globalized market. To be successful, they must leverage a competitive advantage over and above a lower hourly wage—the ability to adapt. The fuel for the adaptability engines of these entities is innovation. This is not to say that these entities are reinventing everything. Innovation is more evolution than revolution where incremental ideas result in valuable improvements in efficiency and productivity. This new juggernaut is leaving the heavier and sluggish companies behind. The only response is to infuse a new knowledge-based culture of evolutionary adaptation and business agility and building innostructures.