

Case Briefs: Innovation Measurement In Firms

From *How To Measure Innovation in the Products and Services of Firms and Use it to Explain GDP Growth for the Second Half of the 20th Century*

Innovation and the Firm

A firm's product innovation metric is enumerated from its performance (as perceived at point of purchase) divided by the unit cost of its manufacture, or (p/c).

Fierce Competition in the Beer Industry

Competition in the beer industry provides a striking example of how some firms survived and prospered by building on their innovation metric while others – such as Falstaff - disappeared.

No one can drink Falstaff beer today but in the 1950's it wasn't far behind Anheuser-Busch in

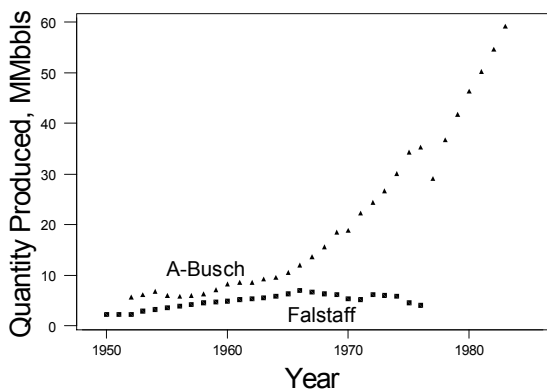


Figure 14 – The popularity of Falstaff peaked in 1966 and then went into decline.

popularity, figure 14. But by 1970, though its performance was catching up, figure 15, innovation behind its manufacturing technology (p/c) was falling behind, figure 16.

The criterion for survival is that a company's innovative manufacturing technology (p/c) must be held greater than a certain parameter. This parameter can be calculated and it maps out a danger zone. In the next figure it is cutaway to show Falstaff falling into it from 1972 –75. It bounced back in 1976 but too late.

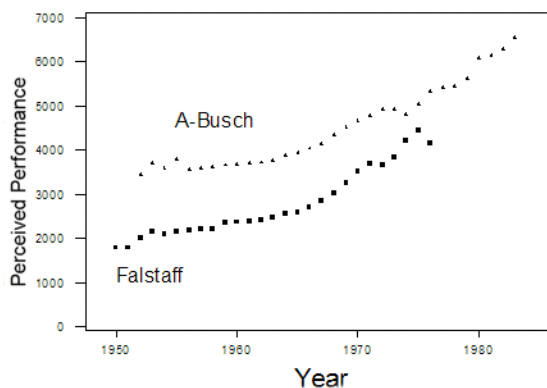


Figure 15 – Falstaff beer raises the perception of its quality and starts to catch up with

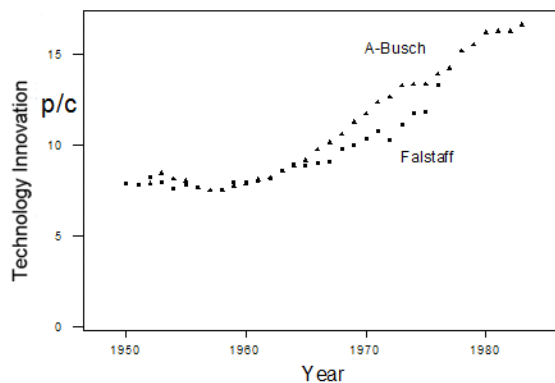


Figure 16 – But Falstaff's technology innovation is falling behind.

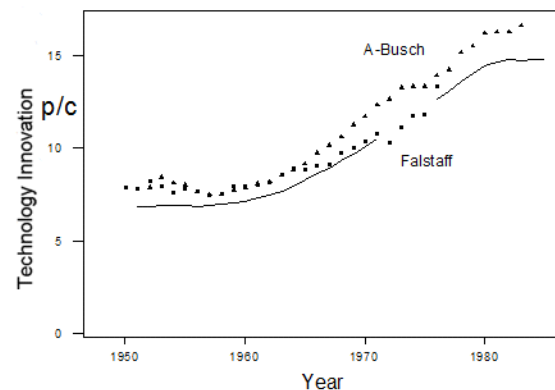


Figure 17 – Falstaff's technology innovation heads toward the danger zone after 1964 and into it in 1972.

With these methods to track innovative progress perhaps Falstaff could have done in 1966 what they finally did in 1976 and be here today.

Instead Falstaff had to shut its breweries but cleverly wrung the last value from its name by becoming a ‘virtual’ beer – brewed for the retaining brand owner - an end-game ploy that stretched until 2005. In the meantime Anheuser-Busch, who soared above the danger zone did so with some very innovative practices. Among them was brewing at capacity in the slow winter months and storing in refrigerated warehouses until the summer. In that way they could meet demand not only without risking investment in new capacity, but also because unutilized capacity raises manufacturing cost.

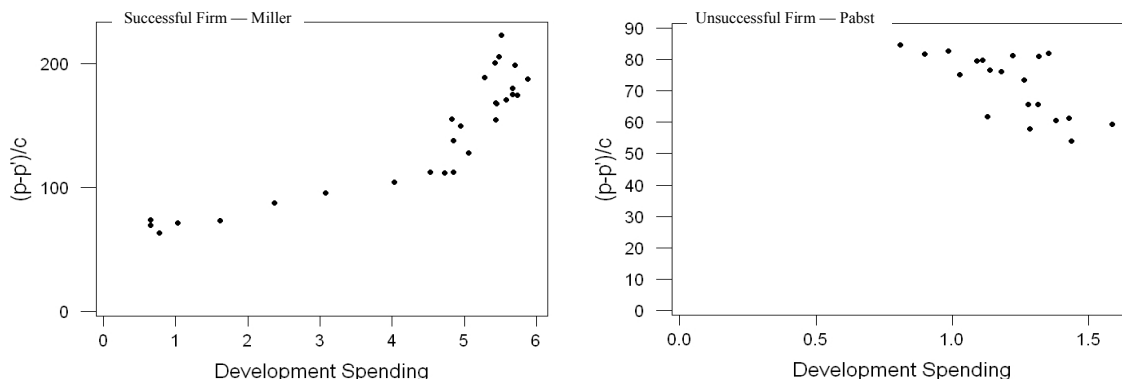
We see in this example that this innovation metric is capturing factors other than just product innovation – and gives rare insight into how competitive innovation works as the ultimate engine of economic growth.

The firms that survive take the products of their better technology forward; those that don’t are absorbed or disappear. The economist Joseph Schumpeter aptly called it ‘creative destruction’.

The Advantages of Measuring Innovation Productivity in Firms

Innovation in Firms

Competition in markets between products (that vie to be purchased) causes firms to come and go. If they are to succeed and expand firms must produce these products at prices that cover their costs with a profit margin. Firms forced into loss by competition contract, merge or disappear, though their products often survive—if trademark and design attributes are strong. As the innovation metric controlling a firm’s destiny is p/c , firms must increase p , and decrease c , by spending money to develop new technologies and improve old ones.



Because a firm buys innovation from its suppliers in goods purchased from them, its own development spending strictly only increases $(p-p')$, where p' is the performance incoming from its supply chain.

Graphs of $(p-p')/c$ against D are shown for firms in the Beer Industry, above. The learning is that development spending must be at least enough to deliver a positive slope.

Individual firms in any industry can use financial and market data to measure (a) their total innovation metric (p/c) - as well as (b) the innovation metric $(p-p')/c$ they contribute.

Using (a) and (b) to answer the question ‘how are we doing in innovation?’ empowers the management of any firm to make decisions that will enhance success. When adopted by all firms the effect could cascade upwards and raise GDP substantially.

This knowledge is offered in detail in the research monograph,

www.techmatt.com/techmatt/Innovation-in-Economics-Missing-Pieces.pdf