LEARNING-BY-DOING

If a firm's prior experience – typically measured by past sales volume– lowers current costs, then the firm benefits from learning-by-doing:[1] Current-Period Costs = a + B_1*Current-Period Volume + B_2*Prior-Period Volume, such that B_1 is positive and B_2 is negative.[2]

The importance of learning is not a new insight. According to an African proverb, "Smooth seas do not make skillful sailors." Aristotle said, "For the things we have to learn before we can do them, we learn by doing them." And according to a Chinese proverb, "Learning is a treasure that will follow its owner everywhere." Economists distinguish several kinds of learning: social learning[3], observational learning[4], and learning by doing.

Learning-by-doing is especially important in high-tech industries where the challenges of supplying leading-edge products are profound. Innovative LCD products are typically priced above recent offerings when first introduced. One of the two reasons why prices fall over the product cycle is that firms become more efficient as they gain experience.[5]

An interest question concerns the extent to which Nvidia's success in producing chips for high-end gaming applications gave them an edge in AI chips.

Is learning private or public? Sometimes one firm's lessons are observed and understood by others. Walmart's failed strategy of providing on-line customers with a physical space to try on clothes was observed by others. But in other contexts, what a firm learns will be "private information." Didi retains information about sales by specific locations and can use such information in its planning. Similarly, we should not expect Alibaba, Baidu, and Tencent to share information about what shows are most popular with their subscribers. That information will help them lower costs and raise revenues in the future.

Learning-by-doing can lower costs and increase revenues. For example, having developed a large number of shows for its platform, Netflix may have lower costs of producing future shows by, for example, knowing how to bundle talent efficiently. Netflix may also be able to use its prior

[1] Nobel Prize Winner Kenneth Arrow suggested that time might proxy for prior-period volume.
[2] Learning can also increase revenues from current-period sales volume, i.e., current-Period Revenue = a + B1*Current-Period Volume + B2*Prior-Period Volume, such that B1 is positive and B2 is positive.
[3] "[T]he process whereby individuals learn about a new and uncertain technology from the decisions and experiences of their neighbors. *See* Munshi, K. (2008). Social Learning. In: The New Palgrave Dictionary of Economics. Palgrave Macmillan, London. https://doi.org/10.1057/978-1-349-95121-5_2768-1.
[4] "[W]hen privately informed individuals sequentially choose among finitely many actions after seeing predecessors' choices." Smith, L., Sørensen, P.N. (2011). Observational Learning. In: The New Palgrave Dictionary of Economics. Palgrave Macmillan, London. https://doi.org/10.1057/978-1-349-95121-5_2990-1.
[5] The other reason that prices typically fall is price discrimination. Innovators set a high initial price to extract more from leading-edge customers who have a greater willingness-to-pay.

experience with scripted drama shows to better evaluate the appeal potential new shows and thereby increase its number of subscribers.

Similarly, Netflix also learns from user-generated data on Netflix's platform, and thus can better evaluate the appeal potential new shows so as to increase the number of subscribers. Netflix's competitors lack access to that data.

Is learning-by-doing the same as economies of scale? No. Firms of the same scale now may have very different experience in prior years.

Readings

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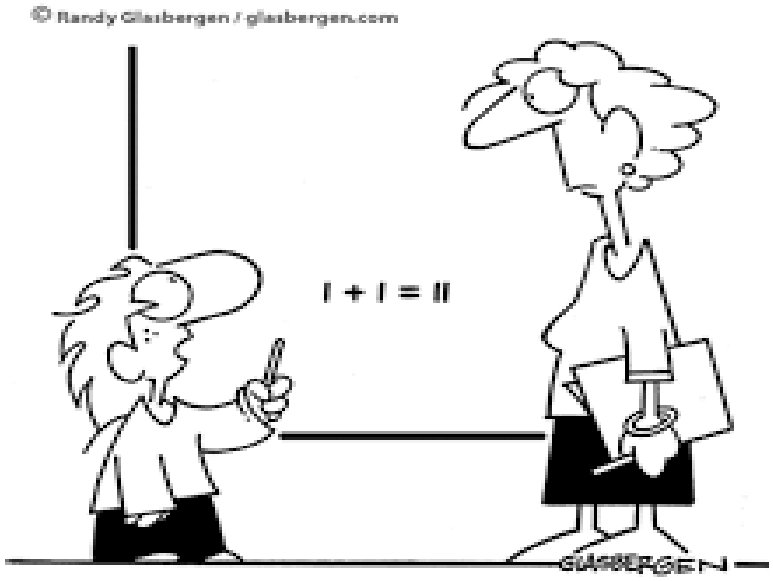

"If you want a better answer, ask a better question!"