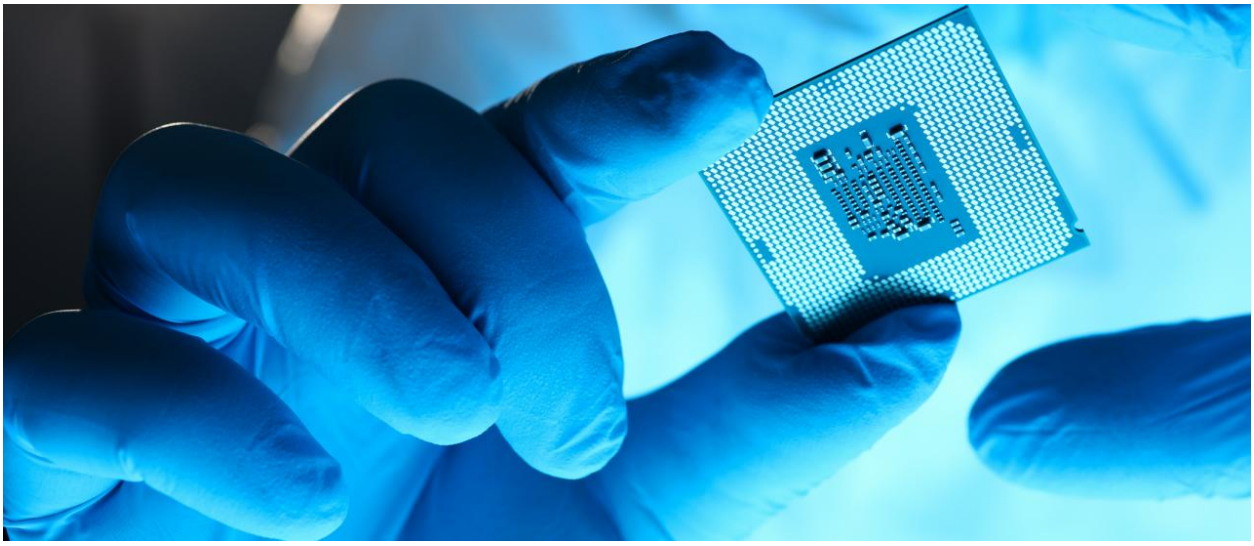
Strategising for Success in Winner-Take-All Industries



By Phebo Wibbens , INSEAD

Wild differences in performance within a market are largely shaped by that market's dependence on resources.

Surprisingly, a process borne out of the ancient printing method of lithography is necessary for you to use your smartphone, tablet or computer. To put information on tiny semiconductor chips, guidance via light is required. In the early 1990s, Nikon was the world leader in this technology, but the Dutch firm ASML has dominated the market since 2002. Now ASML has cornered the market on extreme ultraviolet lithography exposure equipment, an essential chipmaking apparatus in creating the semiconductors that are indispensable for connected devices. ASML is now **the sole firm that mass-produces this technology**.

How does a firm from a small town in the Netherlands beat one of the best-known brands in the world? Nikon attempted to retake its lead but faltered. ASML seized the opportunity to go all in, making enormous investments that unseated the market leader. In my recent **article** in the *Strategic Management Journal*, I find that *competitive amplification* of the critical resources in a market plays an important role in the performance of firms in

that market. The small differences in resource positions either amplify or attenuate over time. If the market leader has an incentive to build out its lead, the resource positions are amplified. They tend to be reduced when a second- or third-tier firm has a bigger incentive to catch up.

So, competition for resources that are highly scalable and depreciate rapidly, like the innovative technology of lithography, encourages market leaders to extend their leads. Over time, any slight differences in resource positions amplifies into large performance differences.

On the other hand, for firms reliant on capacity-constrained resources that last a long time, like industrial plants, it is less important to catch up with the dominant firm, because they face a lower risk of being pushed to a marginal market position.

Not all markets are the same, which is why some have market leaders that are seemingly untouchable – like Facebook or Google. Using a formal model, I show when high heterogeneity of performance versus low heterogeneity can be expected in a market. All firms face limitations in how quickly they can build their resource positions. It is a long-term process saddled with uncertainty. If managers understood which resource positions to watch out for, some of this uncertainty could be lessened.

Amplifying market characteristics

The model I've created is based on two firms competing for a set of resources that try to optimise long-term value. The amplifying characteristics of critical resources are the first step to large differences in firm performance within a market. I then look at market characteristics such as the scalability of resources, the investment requirements, depreciation and time limitations.

Scalable resources

A firm that creates a product that requires a plant has a certain amount of capacity. At some point, once everything has been optimised and runs smoothly, it becomes more expensive to churn out even more product. Land and talent are other examples of capacity-constrained resources.

A consulting business, for example, is in the knowledge industry, but its reliance on human capital leads to capacity constraints. Talent is different from a scale-free resource or a highly scalable one, such as a brand. People,

or talent, need time for development. In principle, a brand can be used for as many products and in as many countries as there are. It doesn't run out of capacity.

In high tech markets, technological knowledge or capabilities tend to be very important. In markets with highly scalable resources, the mechanism that separates the number one firm from its distant second or third is the investment incentives of the leader versus those of the followers. In markets like high tech, the leader has an incentive to invest more than its followers. Highly scalable resources tend to be amplified over time into very high-performance differences.

Large investment requirements

Large financial investments are required when the amount of money needed to ensure a market position doesn’t shrink over time. Some resources are very expensive, with high fixed costs relative to profits. If most costs are variable, that tends to attenuate profit differences. If most costs are fixed, however, that leads to competitive amplification.

The investments a firm like ASML makes are breathtakingly large. They are so huge that although a firm may be profitable, it cannot service investments from its cashflow. ASML was able to overtake Nikon because the conglomerate’s fast lithography machines were no longer cutting-edge.

Time limitations

“Time compression diseconomies” is a **term** invented by INSEAD Professor Karel Cool. It means it's incredibly difficult to speed up certain investments. Consider building a plant. If a firm needs to build one and it’s understood that it will take three years start-to-finish, speeding that process up will be much more expensive. Also, other factors can limit any possible time savings, like permit applications. Buying time is not always possible.

The same is true when building a team or building knowledge. Some things just take time. Speeding them up costs a lot more money, thus it represents time compression diseconomies. Regarding long-term competitive advantage, the time limitation that applies to newcomers (e.g. how fast they can possibly grow) allows market leaders to hold onto their place.

Depreciation

Rapid depreciation of resources tends to amplify competitive differences. Depreciation has been considered a kind of equaliser. If a plant rapidly depreciates, the same is true for all firms in a market. But there is an interesting twist to depreciation: Because rapidly depreciating resources are relatively expensive to build, a much higher continuous investment is needed to keep them up to speed. If technological knowledge depreciates quickly, or an industrial plant depreciates very quickly, a serious financial investment is required to stay in the game. Depreciation has the direct effect of equalising, combined with the indirect effect of amplifying performance differences. The model shows that in many situations, the high price of maintaining these resources leads to competitive amplification.

What can a manager do?

With the understanding that these market characteristics predict how well a firm can compete in a wide field, managers can evaluate their own markets and their firms’ placement on the leader board.

If you're in an early-stage market, it's vital to first consider the critical resources. What do you absolutely need to be profitable that will be hard to imitate? What resources will you compete for? What are the assets and capabilities that your firm will build that competitors can’t easily replicate?

Then, consider the characteristics of these resources. If they are very amplifying, you need to double down on investments quickly. Without big investments, you will be too late. Uber, for example, was an early and serious mover on ride-hailing markets. Many software companies make sizable upfront investments because resource-unique investments are highly scalable. If your firm is too far behind, you have no chance of catching up.

Firms in markets with highly amplifying characteristics must bet on becoming the market leader because there's pretty much no other way to be successful. Like Nikon, which very rapidly, in the span of a few years, was completely displaced.

If you are in a business where the most important resources are capacity constrained, on the other hand, there is room for different firms to compete around the same level. It takes time to build teams or utility plants. There is more room to be in second place, which could be advantageous because potential failures can be avoided. By moving more slowly, you learn more. Moving fast gives you a first-mover advantage, but others will learn from

your own mistakes and those of others.

For managers in established markets, the biggest takeaway is that strong leaders can't rest on their laurels. Paradoxically, the strongest leaders could be the most vulnerable because strong market positions tend to arise in markets with scale-free resources. The amplification dynamics in such markets that can propel a leader into its dominant position could boomerang and similarly propel a competitor to displace the incumbent. Consider the computer industry in the **1960s**, when IBM was utterly dominant. It was like Apple, Microsoft and Google all rolled up into one, but when the **technology shifted** away from mainframes, IBM didn't adapt quickly enough.

The long haul

A long-term perspective is necessary to understand where competitive positions come from. The sizable differences in performance occur over the long term. In my work on **LIVA**, the differences become enormous over 20-year periods. In the end, very few companies scoop up an eye-watering percentage of all the value created on stock markets.

Strategic investments underpin competitive advantage. How do you make resource investments? Where do you place your pawns on the chess board of resource investments? Building your stocks of assets and capabilities isn't played out over months or quarters, but over years or decades. Because Nikon neglected to take the long-term amplification dynamics of lithography into account more than 20 years ago, ASML's market capitalisation is now more than **US$300 billion**. The long-term is where the most interesting strategic processes come to fruition.

Find article at

https://knowledge.insead.edu/strategy/strategising-success-winner-take-all-industries

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About the research

"The role of competitive amplification in explaining sustained performance heterogeneity" is published in *Strategic Management Journal.*