

What Evolutionary Biology Can Teach Us About Corporate Reputation

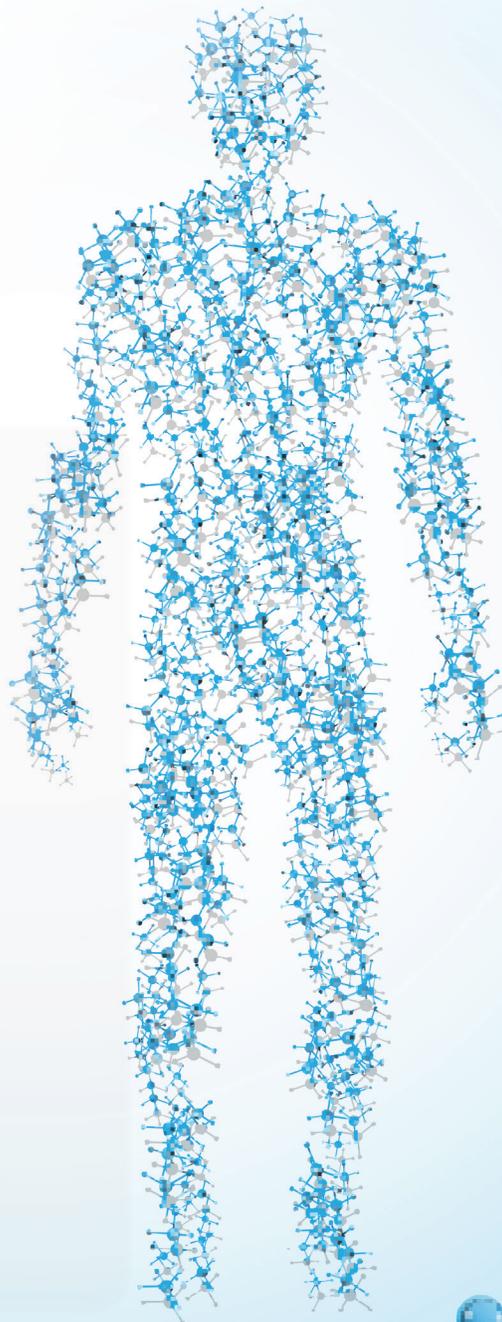
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Paul Argenti and Ryan Calsbeek of Dartmouth explain that corporations should focus not on their rankings, but on the attributes that influence those rankings. They combine evolutionary biology and corporate reputation research to determine what makes a company the best that it can be, arguing that a more scientific approach to corporate success is needed.



We have known for many years that intangible assets, such as brand and reputation, are among a firm's most valuable possessions. Yet firms have historically measured those assets by focusing not on the attributes upon which a corporation's reputation is built, but on external rankings like Fortune's Most Admired, Interbrand's brand rankings, and Harris Poll's Reputation Quotient. While rankings can provide valuable benchmarks, they reflect backward on what has already happened and offer no guidance on how to influence future reputation. Focusing on contributing factors means understanding the specific attributes that make companies great competitors—revealing the real story behind those rankings.

That's where evolutionary biology can help.

Evolutionary biology is, at its core, the study of optimization. Evolutionary biologists seek to understand which combination of traits makes some individuals better competitors than others. The traits that make a great competitor change with time and environment, so a species must evolve to stay competitive as its context changes. Consider Darwin's finches in the Galapagos. On dry islands, where hard nuts provide the only available food, they evolved with stout, powerful beaks. But on islands soaked with rain they evolved with long, narrow beaks good for extracting delicate, soft seeds. Neither bird can eat or survive in the other's environment. The birds that survive best in a given environment are more likely to pass their successful beak genes on to their offspring. This simple "variation-selection-inheritance" relationship determines the path of evolutionary change. Much like biological organisms, corporations need to evolve to survive and thrive. And context matters, just as it does with biological organisms.

Competitive environments determine which combinations of attributes will make the most successful corporate competitors.

Links between evolution and corporate competitiveness were first made decades ago. Nelson and Winter¹ explored how biological processes could predict the winners and losers in a competitive marketplace. They studied how variations between firms caused some to perform better than others. Successful variants are "selected," meaning that a firm's successful attributes are retained in the marketplace, driving economic evolution. New variation is introduced by innovation while existing successful variation spreads by imitation. Lande and Arnold² went on to lay out the mathematics of adaptation, revealing how and why specific combinations of attributes made some individuals better competitors than others.

Firms that compete in multiple contexts can borrow the outcomes-based approach of evolutionary biology to determine how to manage both their resources and such intangible assets as reputation.

So far, the corporate sector has paid little attention to the attribute-based view of selection and evolution. Instead, companies continue to rely heavily on surveys and social science analytics, restricting their ability to measure and understand how different combinations of attributes contribute to their tangible and intangible value. Firms that compete in multiple contexts can borrow the attribute-based approach of evolutionary biology to determine how to

manage both their resources and such intangible assets as reputation.

This approach takes into account another challenge faced by both biological organisms and corporate firms: different competitive environments inevitably favor different attributes. Picture a landscape of hills and valleys. The hilltops represent adaptive combinations of a firm's attributes, such as employee, customer, and shareholder satisfaction, while the valleys reflect unsuccessful combinations. On this landscape, gains in elevation represent improved performance, with performance including any tangible or intangible asset gain. A firm may find that it needs to make only small improvements to particular attributes in order to adapt locally (e.g., within its industry) but to reach the peak of a distant hilltop (e.g., competitive dominance in the Fortune 100) it must make larger changes to more attributes. Traditional analytical approaches are no help here, because they cannot measure the costs and consequences of competition in different competitive environments.

We founded Revolution Insights Group to help companies use advances in evolutionary analytics to identify the most effective ways to adapt and excel in a competitive landscape. The set of models we have devised allows us to statistically compare the peaks and valleys of these rugged corporate adaptive landscapes. We arrange aggregated data from a variety of perspectives (e.g., employees, customers, shareholders, communities, and the environment) for hundreds of companies over a period of years in matrix form. Next, we apply a tensor decomposition, a mathematical technique that finds the key axes of variation that determine which attributes form hilltops and which form valleys. Our approach is the first to produce a rigorous understanding

of which outcomes the corporate evolutionary process favors. We can then pinpoint, in various contexts, the precise areas in which a firm is performing weakly compared to its competitors.

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When it comes to measuring and managing intangible assets like reputation, zeroing in on your company's adaptive attributes—those that differentiate great firms from the rest—can be transformative. As Porter,³ discovered, deciding what *exactly* should be improved is often confusing to companies crafting a new strategy. While some attributes (like high-quality products and services) are obvious, adaptive differentiators will set a firm apart, pushing it to the top of the corporate landscape.

Imagine understanding the key attributes that define being the best in your industry. Now extend that understanding to your geographic region of interest or to the Fortune 500. Some of these attributes will be constant, while others will differ from one domain to the next. Either way, knowing in exactly which of dozens of attributes—including employee satisfaction, customer loyalty, environmental impact, and financial performance—you lag behind the competition, and by how much, is the foundation on which you can build your company's reputation. No conventional ranking delivers anything like this level of specificity or utility.

Every company's reputation is complex—a shifting tapestry of the perceptions of its disparate constituencies. You can certainly control the names, symbols, brands, and corporate character that you present, but these groups perceived them through a complex set of interactions that ultimately determines reputation. That complex set of interactions can now be measured through a rigorous and scientifically-vetted framework designed to handle large amounts of data. The dynamic nature of managing intangible attributes requires a continuous series of analyses which allow firms to adjust as perceptions shift.⁴

We tested our dynamic approach on a global technology company that wanted to understand why, by internal measurements, its reputation was declining. Its executives had built the existing management framework on their own instinct that customer satisfaction was the most important component of a strong reputation. Our analysis revealed that, in fact, the leading companies in their field were focused first on employee satisfaction, a factor that wasn't even on this company's radar until our scientific approach brought its importance to light. The firm had put tens of millions of dollars into measuring customer satisfaction, when the real issue was essentially an HR problem. The firm was outperforming its competitors in customer satisfaction, but lagging behind on employee happiness. Excellent customer service may not have been hurting the firm³ but it also wasn't an area in which additional gains provided further value. The solution wasn't for the company to start ignoring its customers, but rather to understand that, by increasing its focus on employee satisfaction, it could improve interactions with customers, optimize its reputation, and increase sales.

Two other companies, one a large pharmaceutical firm, the other

a large manufacturing company, had each made significant technological advances in their industries. Recognizing the strength of reputation enjoyed by many tech companies, each wanted to know how it could reposition itself to look more like tech companies. One of the companies was developing specialized software for one of its products while the other, like many companies today, just wanted to understand how repositioning might enhance its reputation. Our analytical approach allowed us to compare the attributes that contributed to adaptive combinations in the fields in which these firms had an interest (e.g., manufacturing vs. technology). By comparing the key attributes of each company to those of competitors from the tech sector, we revealed that the attributes which make great tech companies (innovation, environmental sustainability, employee diversity) were very different from the key attributes of their own industries (breadth of market reach in one case, quality of products and services in the other). Both companies found attributes they could adopt from the tech sector, focusing on diversity and innovation to improve their reputations.

An evolutionary approach—designed to reveal all of the independent variables that drive adaptation in a range of competitive environments—surpasses traditional social science methods and helps you devise a richer, more practical approach to managing your company's intangible assets.

These examples demonstrate the folly of clinging to survey-based reputation management. An evolutionary approach—designed to reveal all of the independent variables that drive adaptation in a range of competitive environments—surpasses traditional social science methods and helps you devise a richer, more practical approach to managing your company’s intangible assets.

The time has come for companies to use scientific methods to measure and nurture their reputations. Their ability to adapt to the changing needs of their constituents in the 21st century depends upon it.

Given the vulnerability of corporate reputation and the increasingly fierce competitive environment, the old adage that you can’t manage what you don’t measure is more relevant than ever. Just as environmental context is crucial to evolutionary adaptation, competitive context is crucial to finding the combinations of attributes that build strong business reputations. The time has come for companies to use scientific methods to measure and nurture their reputations. Their ability to adapt to the changing needs of their constituents in the 21st century depends upon it. ■



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Endnotes

1. Nelson and Winter 1982 *An evolutionary theory of economic change*. Belknap Press, Harvard University Press, Cambridge Ma.
2. Lande, R. & Arnold, S.J. (1983) *The measurement of selection on correlated characters*. *Evolution*, 37, 1210–1226.
3. Porter, M. E. *The Competitive Advantage: Creating and Sustaining Superior Performance*. NY: Free Press, 1985.
4. Wagner, K. *The ‘Stories’ product that Facebook copied from Snapchat is now Facebook’s future*. Vox Recode, 2018.