

Honey Bees and the Waggle Dance: A Mental Model

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There is a lot to learn from nature. Multidisciplinary thinking, in essence, urges us to ponder over deep, durable truths in diverse subjects, and use these truths to solve seemingly intractable problems. And there are few truths more profound than those taught by Mother Nature.

Take bees for instance. Bees have survived and thrived on this earth for millions of years. And the waggle dance is an important reason for their survival particularly in specific habitats.

What is the waggle dance?

Honey bees need nectar from flowers to make honey, and flowers are available only in the spring. Thus, a bee hive needs to store enough honey in the spring — when the flowers are in full bloom — to ensure they survive the winter. Honeybee workers search far and wide, high and low to find the best flowers to harvest nectar. When they find them, they go back to the hive and “tell” their fellow worker bees how to get there. The way they “tell” their worker sisters (females do all the hard work, like in our species is through the waggle dance. It seems incredible, but the waggle dance of the bees is extremely accurate up to a certain distance — quality of food, direction, angle and distance are all conveyed through this short dance. After the fellow bees see the dance, they fly off immediately to the new source to bring the nectar.

The interesting thing is — around 20% of the worker bees who see the dance, do not pay any attention to it and go off in their own direction. These bees explore at random, seeking nectar from sources which are still not known.

The bees seem to have majority of their population focus on foraging from known, determined sources while the remaining minority seem to be R&D bees who are out searching for new sources. This duality seems to be a key factor in bees’ survival. If there are not enough worker bees focused on foraging from known sources then the bees die out eventually as they might not have enough food for the winter. If there are not enough R&D bees, the bees would die out over the long-term as once the existing sources are depleted, they would have no new sources and starve to death. Both kinds of worker bees are equally important — if not for one, the other will starve to death.

The waggle dance of bees provides an interesting framework for how businesses should think about survival and growth. This can be (and have been) applied by businesses in different ways.

Take the example of Berkshire Hathaway as a beehive in a large garden. Various businesses like the insurance subsidiaries, See’s Candies, BNSF, among others are the worker bees who forage the known parts of the garden that are their niche. They provide the honey which is used by the R&D bees like Warren Buffett, Charlie Munger, Ted Weschler, Todd Combs and others to wander around searching for new sources of nectar to bring to the hive. They complement each other. Some parts of the garden — textiles, Dexter Shoes — may no longer have any flowers left. But as long as they are able to forage the existing flowers efficiently and find new flowers, the Berkshire beehive would continue to survive and grow.

Consider Costco as the beehive. Majority of the employees are focused on foraging the existing

operations and stores across geographies, while a smaller proportion are focused on finding new products to bring to the store, new locations within existing geographies, newer geographies, etcetera to bring to the hive and make it larger.

Amazon is another great example. What started of as a small hive that sells books online has metamorphosed into a behemoth beehive that sells pretty much everything that is worth selling. Amazon's focus on nurturing and encouraging R&D bees also allowed for discovery of entire new gardens like ebooks, web services, among others.

Consider Cera Sanitaryware, a well-run sanitaryware business based out of India. [Sanitaryware](#) is a division of ceramic wares. It is a vitreous china body fired at high temperatures (above 1000 degree Celsius) to obtain a chemically inert, visually pleasing ceramic ware that is used in bathrooms. Cera is the third largest player in India in its space with market cap of ~\$400 million and enjoys exceptional economics (average returns on capital of above 25% for last 15 years). Cera was focused on just making sanitaryware for around 27 years. After it became good at exploiting that particular niche, it ventured into faucets (which can be considered an adjacent garden), which increased its total addressable market, and then a few years later into tiles.

As Taleb says, time is the ultimate fragilizer and the test for success is survival over long periods of time. The waggle dance of bees gives us one framework to understand how to design for survival. Simply put, companies should focus on their core operations which are quite deterministic, but not to the extent that they neglect the optionalities that come from randomness. In the interest of showing short-term results (buybacks, dividends and profit), many have focused on quantifiable actions like supply chain efficiency and outsourcing that reduce costs and fragilized their hives. They were not willing to create redundancy, to encourage R&D bees, to enable random experimentation that can lead to discovery of new products, lines of business, or any such thing that can increase the addressable market which prolong their survival.

The most optimal approach, as in most things in life, is to maintain a balance — a balance between exploiting the known and exploring the unknown. Without this, our fate would be similar to that of the bees that sacrifice optionality on the altar of efficiency and decide not to feed their R&D bees.

Reference: [What bees can teach us about efficiency](#), by Rory Sutherland