Introduction to Biomimicry
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Lecture - 05
Case Study

Next, we are going to look at the story of a company that used biomimicry in order to create a product. The company is Spintex Engineering. Now every week we are going to be looking at examples of entrepreneurs, teams, and innovators who used biomimicry in order to devise a new product, a new process, or a new service. Today's story is pertaining to Spintex Engineering.

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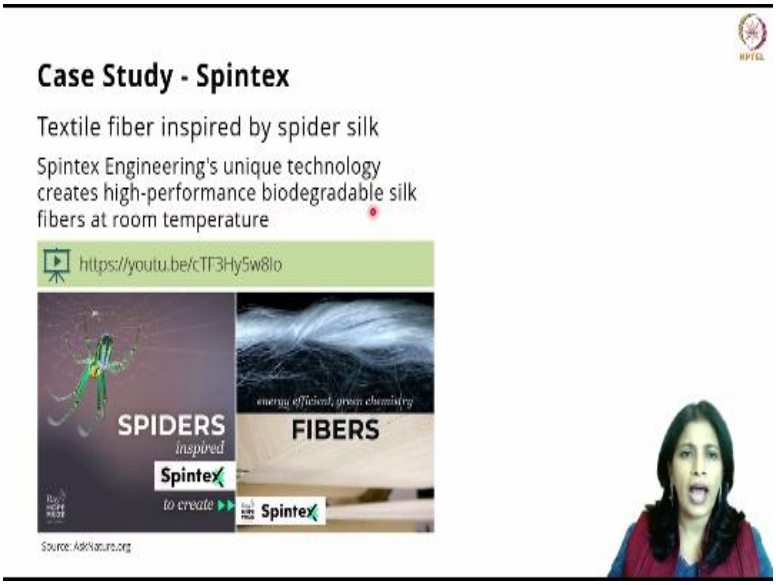

Now Spintex Engineering, what did they do? They came up with this technology to create biodegradable silk at room temperature. And for this, they were inspired by the spider that does exactly the same thing, produces silk at room temperature. There is a short video that explains what the Spintex engineering team did. You can pause this recording and look at the video and come back to this recording if you like.

The link to this video is right here as well as posted below the recording. Now Spintex also won the Ray of Hope Prize. The Ray of Hope Prize is an annual prize given to companies, entrepreneurs, and teams that use biomimicry, nature-inspired innovation in order to come up with out-of-the-box products, services, or processes. So the Spintex team won this prize in 2021. What did the Spintex team do?

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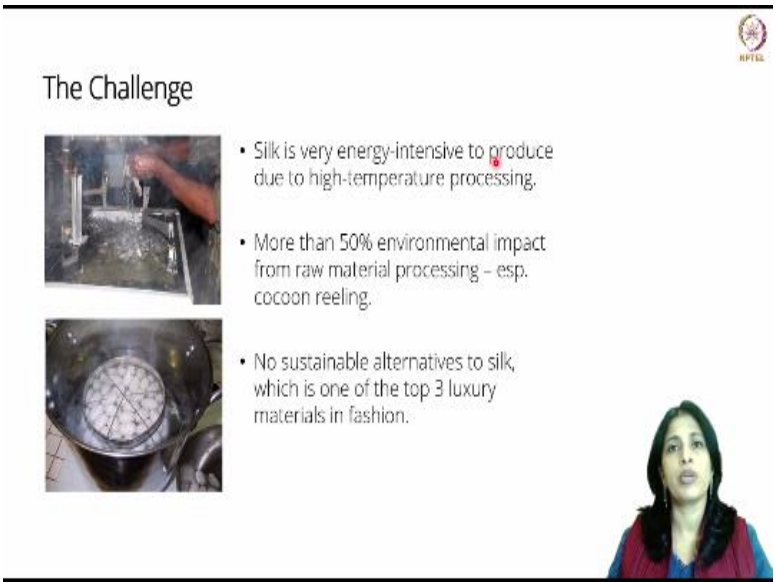

They looked at the current process for producing silk. Now silk, as many of you may know is an extremely energy-intensive fiber to produce. The environmental impact of silk is second only to leather. Imagine that. We think leather is extremely polluting. But silk is also got a huge environmental impact. Silk production has a huge environmental impact as well.

And why is that? Because of the raw material processing that happens. Thousands of liters of water need to be boiled in order to process the raw material, which is the silk cocoons. And because of this, there is a lot of energy is needed to spin silk. Silk is also an important fiber not just in the fashion industry, but in other industries as well. And there is no real sustainable alternative to silk.

So keeping all of this in mind, the Spintex engineering team started looking to nature for inspiration.

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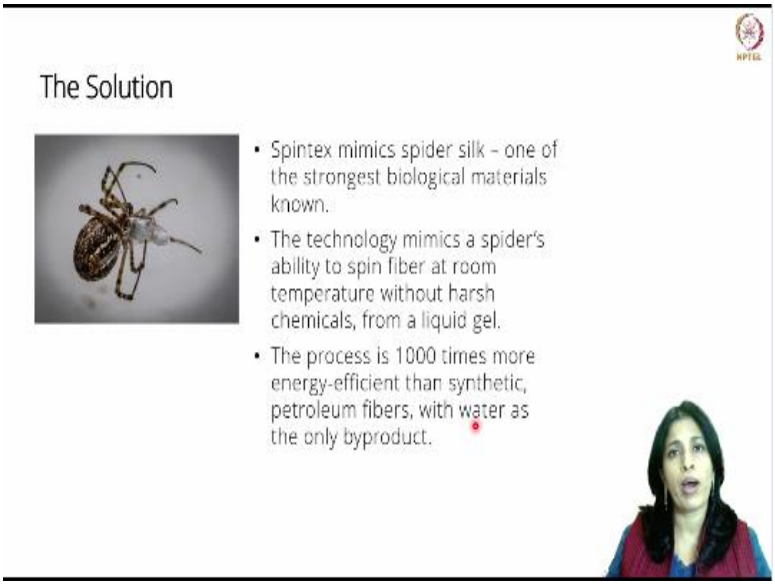

And what they did is they looked at the spider. Now spider silk is one of the strongest known biological materials. They studied the spider and how the spider produces silk. And they were able to mimic that and create the technology to create silk from a liquid without any harsh chemicals with a process that is 1000 times more energy efficient. And the best part is the only byproduct is water.

There are no other toxic byproducts. So that is what the team at Spintex engineering did.

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A little bit more on the biomimicry part of what they did. What did they look at, they looked at the spider. More importantly, they looked at the strategy that the spider employs in order to spin silk. So spiders hold the liquid, you know the liquid pot, the

silk proteins in their body. And when they are ready to spin the silk, they squeeze it through these tunnels and stretch it out in the form of a fiber.

This is the same strategy that the team at Spintex employed in order to create silk fiber that is biodegradable, which does not create any toxic byproducts, and is able to be produced at room temperature. For more information, you can look at AskNature.org. We will also be looking at this website in greater detail later on. And AskNature also has several such examples of companies that have used inspiration from nature in order to create out-of-the-box innovations.