A need or catalyst for change is identified, and a new material is developed. Rounds of pilot-scale testing are necessary to assess quality and safety, physical properties, performance, and more. These tests may need to be repeated, and material compositions adjusted, until consistent results are achieved, and the raw materials supplier can attest the material is safe for customers. Afterward, production of the new material is scaled for commercialization.

Note: Regulatory and/or third-party testing also may be needed depending on the application and certifications being pursued. This could add up to five years to the timeline in some instances.

As the supplier stakeholders are performing their due diligence, CPG companies have been studying and anticipating consumers’ evolving preferences. Once an unmet need is identified, resources are allocated, and a team is formed to begin testing. Teams typically include supply chain members who understand the purpose of the project and can advise on appropriate packaging materials.

Following satisfactory results with lab-scale testing, larger pilot-scale tests are performed on qualified, commercial-grade packaging. These studies include shelf-life testing of the quality of a product in the packaging, barrier testing, and plant trials of the packaging on the company’s manufacturing equipment. During this time, CPG companies also conduct consumer testing of the product and its packaging; they may iterate on the packaging, if needed.

Next, the CPG company will complete rounds of small-scale finished packaging tests on a variety of samples containing the new material. These studies will determine which samples meet performance, quality, and safety standards of the CPG company’s products.

The best packaging is selected, and if needed, capital investments are made to scale for mass production.

Commercialization and marketing processes take place, and the new packaging product flows through distribution logistics and is available to consumers in stores and more.

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