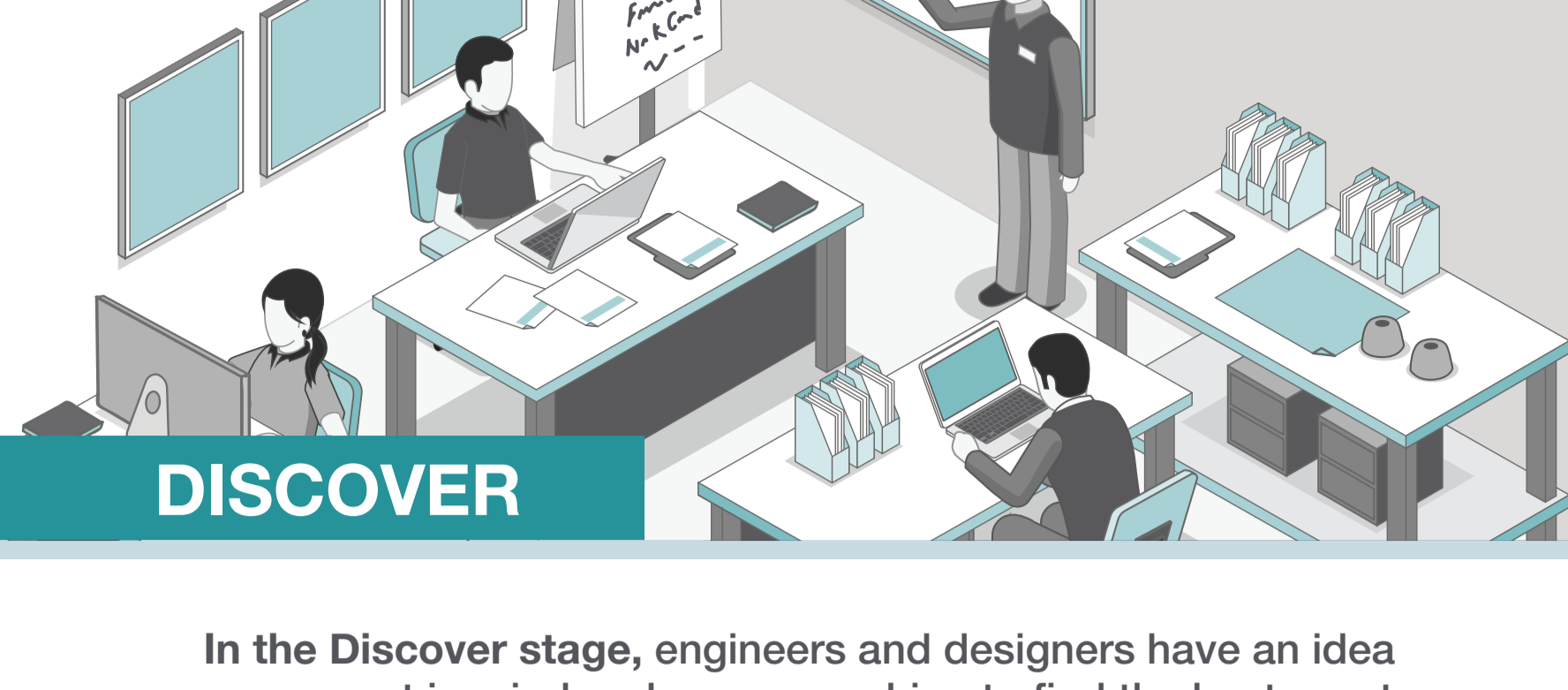


# THE PRODUCT DEVELOPMENT LIFE CYCLE

It starts with an idea. And with careful planning, quality production and continued maintenance, your ideas can come to fruition with the help of Stratasys Direct Manufacturing's expertise in 3D printing and advanced manufacturing. Let's take a closer look at the product development life cycle.



## DISCOVER

In the Discover stage, engineers and designers have an idea or concept in mind and are researching to find the best way to bring their idea to fruition.

This is where our resources come in – if a customer is intrigued by the benefits of additive manufacturing (AM), we have the resources to inform their future design and planning.

### Related offerings:

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li><b>Resources:</b> <ul style="list-style-type: none"> <li>• White papers</li> <li>• Design guidelines</li> <li>• Topical articles</li> </ul> </li> <li><b>Design Services:</b> <ul style="list-style-type: none"> <li>• Consultation</li> <li>• On-site training and assessments</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>Conceptual models to gain consensus and demonstrate feasibility</li> <li>Material and process development</li> <li>Evaluation and recommendation of production manufacturing methods</li> </ul> |
|---|--|

Discovering the options available for your project helps inform the next crucial step in the development cycle – Design.



## DESIGN

In the Design stage, engineers validate and test their designs with rapid prototyping. It's the best time to tangibly see their product concept and get feedback from key collaborators, stakeholders and clients.

### Related offerings:

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li><b>Design Services</b> <ul style="list-style-type: none"> <li>• Design for Additive Manufacturing</li> <li>• Design of manufacturing tooling</li> <li>• Consultation</li> <li>• On-site training and assessments</li> </ul> </li> </ul> | <ul style="list-style-type: none"> <li>Design guidelines</li> <li>Rapid prototyping</li> <li>Engineering &amp; testing (form, fit, function)</li> </ul> |
|--|---|

Then, with a validated design in hand, you can begin the planning process.



## PLAN

With an optimized design that's been validated by prototyping, a development team begins to specify the course of action to get a product to market. At this stage, designers and engineers typically pick the materials and manufacturing methods for their parts, coordinate with suppliers and decide how much work to in-house vs. out-source.

During planning, product developers may utilize concept models to facilitate feedback from stakeholders or functional prototypes in order to test materials and manufacturing methods.

### Related offerings:

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>Light assembly services</li> <li>Functional prototypes and concept models</li> <li>ISO 9001 and AS9100 certified manufacturing</li> <li>Broad offering of manufacturing process and materials</li> </ul> | <ul style="list-style-type: none"> <li>Consumer Technology Association (CTA)</li> <li>Just-In-Time delivery</li> <li>Bridge and other manufacturing tooling</li> <li>Coordination within established supply chain</li> </ul> |
|---|--|



## PRODUCE

After careful planning, and with research behind the vision, you're ready to enter into production.

This stage is when customers are ready to produce parts. As a comprehensive solutions provider, we offer broad range of additive and conventional production technologies, finishing and assembly services, and excellent quality controls.

### Related offerings:

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>ISO 9001 and AS9100 certified manufacturing</li> <li>Manufacturing aids</li> <li>Bridge to production solutions</li> <li>Conventional/Subtractive Manufacturing</li> </ul> | <ul style="list-style-type: none"> <li>Customer-defined manufacturing specifications</li> <li>Finishing Services</li> <li>3D Printing/Additive Manufacturing</li> </ul> |
|---|---|

**38%**  
Percentage of global revenue from AM goods produced by U.S. businesses <sup>(1)</sup>

With our advanced manufacturing services we can deliver effective manufacturing tools to help you streamline the production floor. These tools can also serve the final stages of the product's lifecycle.



## REPLENISH

After your product is on the market, there's still significant work to do to maintain the product and end of life planning. Suppliers need to maintain inventories of spare parts and provide maintenance and repair operations (MRO).

### Related offerings:

- |   |   |
|---|---|
| <ul style="list-style-type: none"> <li>Spare parts</li> <li>On-demand production</li> <li>Inventory management</li> <li>Conversion of designs from molding to additive</li> </ul> | <ul style="list-style-type: none"> <li>Digital inventories</li> <li>Tooling maintenance</li> <li>Legacy parts for MRO activity</li> </ul> |
|---|---|

ADDITIONAL SOURCES  
1. <http://nvlpubs.nist.gov>