What is a Customer-Facing, Rules-Based Product Configurator?
A self-service, rules-based product configurator residing on a manufacturer’s website intuitively guides end-users as they build customized products that match their configuration and performance needs while simultaneously remaining within your configuration rules and limits. A successfully configured product is one that meets buyers’ product performance needs within specified operating conditions while also conforming to manufacturer’s creation rules and geometry. Internally-focused ERP and CAD configurators are designed to assist CAD drafting users while conforming to factory’ manufacturing capabilities. Customer-facing configurators satisfy all three conditions: 1) the product’s ability to meet the specifier’s requirements, 2) the user’s CAD department’s need to ‘design-in’ the configured part into their assembly; and 3) your factory’s ability to produce the requested product within its capabilities. A customer-facing configurator is like a virtual sales engineer helping customers build-to-suit, while guaranteeing that only valid configurations and options are selected along with the associated CAD files, reducing both costly errors and factory resubmissions.

Who needs to offer an interactive, self-service product configurator on their website?
If your print catalog contains a “How to Order” page instructing buyers on how they should select and exclude parameters and their values, then you likely need to give your website visitors access to an interactive product configurator. Interactive configurators are also helpful, time-and-cost saving tools for use by your sales team, CSRs and your resellers’ CSRs. Configurators are proven to streamline and automate the creation and submission of accurate and timely sales orders to the factory.

What is the technology that drives the i-MARK complex-product configurator?
A product configurator is used to precisely guide end-users to custom-build a complex-engineered product or system by matching user need with the manufacturer’s building rules. Employing higher mathematics (predicate calculus) and rules-definition scripting, i-MARK’s potent optimizing configuration rules compiler (OCRC) creates unique product configurators by solving for every possible combination of acceptable selections. This may require the OCRC to process over one billion iterations. Once put to work, the configurator evaluates rules as quickly as users make their selections and it can adapt to guide both new and experienced users alike. Users need not know how configurations are built; only know what the product must perform and under what conditions. Predicate-calculus configurators ensure that users get valid configuration results, and never getting the dreaded “part-not-found, call factory” message.
How is a ‘predicate calculus’ product configurator used, and what results does it deliver to the user?

Parameter value options can be selected from drop-down lists, check boxes, or graphic icons - in any order desired. The configurator is updated as rapidly as the user makes selections and products with smart part numbers are auto-coded on-the-fly. Options lists or bills of materials can be intelligently compiled in the background and auto-transferred to ERP systems. Supporting graphics, such as performance curves, tables and product images can be dynamically displayed during configuration, corresponding with selections. Links are provided to view/acquire supporting information. Standard and ‘quick-ship’ configurations can be selected with a single click and the final configuration’s geometry can be linked to a 3D CAD solid modeling service to create-and-return the precise CAD model in real-time. The CAD file can be viewed in 2D/3D and downloaded in popular standard and proprietary CAD formats.

What must you prepare in advance of i-MARK creating your product configurator?

Manufacturers need to follow three simple steps to prepare i-MARK to build a product configurator for each of their configurable families. Highly similar product families may be able to use the same or slightly revised configuration engine.

Step 1 - Define the options. All of available product options must be listed along with applicable descriptions and product codes. Related options are grouped together and the selection method is defined (drop-down, check box, etc). i-MARK will provide an Excel spreadsheet template to help simplify this process.

Step 2 – Define the rules. Product configuration rules define what options can be selected in what combination. The rules are expressed in a simple shorthand notation. For example, you may have a rule that states; “if pipe size is greater than on half inch, then the color blue is not available”. For example, this would be expressed as: \( \text{IF pipe size} > \frac{1}{2} \ \text{THEN NOT color} = \text{blue} \). As in Step 1, i-MARK provides a spreadsheet template to help streamline this process.

Step 3 – Compile the configurator. When the spreadsheet is complete, i-MARK passes it through its configuration compiler to produce the required runtime code. Included in this step is a validation process, which checks for consistency between the input rules and options ensuring that all intended configurations can be selected. The generated code is then inserted into an ‘operating template’ that will govern the user experience during configuration. Chosen configuration aids/graphics are imbedded in the template.

To learn more about i-MARK and our SaaS-based product configuration software, a core module of our 24/7BUSINESS™ self-service eBusiness suite, please visit www.imark.com or contact our sales department at: 1-800-297-7119 X224.