Critical Capabilities for Configure, Price and Quote Application Suites

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This Gartner Critical Capabilities report evaluates the leading configure, price and quote application suites against six use cases. Application leaders should use the ratings in this report to identify a shortlist of vendors for deeper evaluation.

Key Findings

■ Configure, price and quote (CPQ) vendors are focused on delivering solutions in the cloud. This is where almost all innovation and growth are occurring.

■ Leading CPQ solutions can integrate seamlessly with strategic CRM platforms such as Salesforce or Microsoft Dynamics 365.

■ Leading CPQ solutions support the direct sales, reseller and customer self-service channels, and expose APIs to support channels that require a custom user interface (UI).

■ The products evaluated for this report have widely varying capabilities for selling complex manufactured products and subscriptions.

Recommendations

Application leaders responsible for CRM sales technology should:

■ Lower costs and shorten time to quote by replacing back-office quoting and ordering functions with modern, cloud-based CPQ applications that can be used by sales representatives.

■ Evaluate CPQ applications by choosing those that align with your strategic CRM platform and that support all anticipated sales channels and use cases.

■ Create a CPQ application shortlist by selecting vendors with demonstrable support for the types of products (for example, complex manufactured goods or subscriptions) sold by your organization.

■ Verify good click-to-click response times in a configured demo and by checking that references are seeing good user adoption.
What You Need to Know

This Critical Capabilities research accompanies the “Magic Quadrant for Configure, Price and Quote Application Suites” and is intended for use by application leaders when evaluating and selecting the optimal CPQ platform.

Too many CPQ implementations experience low end-user adoption and dissatisfaction because of poor UX design and bad click-to-click response times. In response to this, the 2020 Critical Capabilities report assigns greater weight to UX design and response times. This has resulted in significant changes to the use-case rankings from those published in 2019, which were more weighted toward functional completeness. The rankings now better reflect Gartner’s level of confidence in the products.

As an application leader, you should use this research to help understand the capabilities of the leading CPQ platforms and to identify a shortlist of vendors that excel at your primary use case. It is better to use the scoring to frame a relevant shortlist of vendor products that best align functionally with your business needs than it is to use the scoring to identify a single vendor’s product.

You should make note of the critical capabilities weightings for each use case, as they may not be optimized for your organization, and use the “Customize” functionality in the online version of this research to adjust the weightings based on your specific needs.

In addition, we encourage you to consider other vendors that may not have met the inclusion criteria for this research. These vendors could provide a solution that is a good fit for a particular industry or set of requirements (for example, a visual configurator).

For additional vendors, see the “Honorable Mentions” section of the “Magic Quadrant for Configure, Price and Quote Application Suites.”
Critical Capabilities Use-Case Graphics

Figure 1. Vendors' Product Scores for the Direct Sales Use Case

<table>
<thead>
<tr>
<th>Product or Service Scores for Direct Sales</th>
<th>Score</th>
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<tbody>
<tr>
<td>SAP</td>
<td>3.69</td>
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<tr>
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<td>Yagna IQ</td>
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As of 29 July 2020

Source: Gartner (September 2020)
Figure 2. Vendors' Product Scores for the Channel Sales Use Case

Product or Service Scores for Channel Sales

- PROS: 3.61
- SAP: 3.59
- Oracle: 3.52
- Conga: 3.49
- Salesforce (CPQ): 3.42
- Accenture: 3.41
- CloudSense: 3.40
- Salesforce (Vlocity CPQ): 3.39
- Tacton: 3.35
- KBMax: 3.23
- FPX: 2.88
- Vendavo: 2.85
- Zuora: 2.77
- Infor: 2.73
- Pricefx: 2.51
- Apparound: 2.08
- Yagna IQ: 1.98

As of 29 July 2020

Source: Gartner (September 2020)
Figure 3. Vendors’ Product Scores for the Self-Service Sales Use Case

Product or Service Scores for Self-Service Sales

- **SAP**: 3.88
- **CloudSense**: 3.83
- **Oracle**: 3.77
- **Salesforce (Vlocity CPQ)**: 3.61
- **FPX**: 3.60
- **Accenture**: 3.56
- **PROS**: 3.36
- **Salesforce (CPQ)**: 3.30
- **Conga**: 3.28
- **Infor**: 3.24
- **Tacton**: 3.14
- **KBMax**: 3.09
- **Zuora**: 2.73
- **Apparround**: 2.46
- **Pricefx**: 2.41
- **Vendavo**: 2.39
- **Yagna IQ**: 1.77

As of 29 July 2020

Source: Gartner (September 2020)
Figure 4. Vendors' Product Scores for the Subscription Management Use Case

Product or Service Scores for Subscription Management

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As of 29 July 2020

Source: Gartner (September 2020)
### Product or Service Scores for Complex Manufacturing

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As of 29 July 2020

Source: Gartner (September 2020)
Figure 6. Vendors' Product Scores for the Solution Selling Use Case

Product or Service Scores for Solution Selling

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As of 29 July 2020

Source: Gartner (September 2020)
Accenture

Accenture Bit2win Sales should be considered if you are a telecommunications or utility company running Salesforce CRM. The product integrates with Salesforce Sales Cloud for the direct sales channel and with Salesforce Partner Communities for resellers. It supports self-service digital commerce by either using Salesforce Community Cloud, a prebuilt connector to Adobe Experience Manager (AEM), or exposing microservice APIs to a custom UI. It is also possible to publish the Accenture Bit2win Sales product catalog to Salesforce Commerce Cloud. Mobile devices are supported by a Salesforce Mobile UI.

Products can be selected using a catalog with faceted search and product comparison. There is also a free-text search tool. A guided selling tool is available for utility companies. It is possible to define product eligibility logic in declarative rules or JavaScript. The catalog shows customer-specific pricing prior to product selection. The product supports most subscription ordering requirements with out-of-the-box workflows for renewal, amendment and termination. Accenture's support for contractual commitments and rebundling is the best evaluated for this report.

The configurator has a condition/action rule engine with support for reusable subassemblies, attribute inheritance and rules that query the transactional context. However, support for constraint rules and recommendation messaging is limited, and the configuration UI layout is generated by the application and is not as flexible as that offered by some other products. The pricing engine includes out-of-the-box support for price lists, volume discounts, attribute-based pricing, sales agreements and bundles. The newly released promotions capability is one of the most comprehensive evaluated for this report.

The “what you see is what you get” (WYSIWYG) document designer requires any conditional logic to be defined in a technical syntax that is not suitable for nontechnical business users. In the demo shown to Gartner, the product was able to edit a large transaction and quickly generate a very large proposal. Electronic signature is included, and approval workflows are managed using a graphical editor. Payment details can be captured via an integration with Zuora. There is no support for line grouping, contract redlining or goal-seeking discounts.

The product includes a powerful order decomposition and orchestration engine. There are out-of-the-box integrations with SAP ISU and Zuora for placing, tracking and changing orders.

Accenture Bit2win Sales benefits from the extensibility features of the Salesforce platform. Most business logic and rules are implemented in a rules framework called “archetypes,” which appears powerful, but can be a little difficult to administer due to its level of abstraction. Both the end-user UI flow and the admin UI were a little confusing. Business rules are implemented in Java and typically run on Heroku but can be deployed to other platforms or on-premises.

The product includes a highly scalable workflow engine that is used for a variety of event-driven processing such as bulk updates of many customer assets.
Apparound

Apparound Power CPQ is best suited for selling simple products using a mobile device. The product’s main strengths are its native applications on Android, iOS or Windows for running when disconnected from the network, and signature capture on mobile devices. These features make it suitable for use in stores or when selling door to door. It does not currently support the reseller channel. The direct sales UI is built upon public web service APIs that could be used as the basis for other channels such as self-service digital commerce. Integration with CRM and fulfillment systems is via third-party middleware (Zapier, for example). Unlike most other CPQ products, the Apparound quoting UI is not embedded within a CRM UI, resulting in a disjointed experience for users of both CRM and CPQ functions.

Product selection is achieved via a basic visual catalog, a powerful textual product search or a built-in bar code scanner. Bundles are suggested by a guided selling tool. The application lacks a B2C-grade sales catalog and other more advanced product selection capabilities. Support for recurring charges and product eligibility rules make Apparound Power CPQ suitable for selling telecommunications and utility services. However, other than a basic renewal capability, there is no support for managing those subscriptions. Prepick pricing is supported throughout the product selection UI.

The configurator has a basic condition/action rule engine that only supports selection and exclusion of products. It is possible to reuse a subassembly. The display sequence of options is defined by a drag-and-drop admin UI. Apparound Power CPQ is not suited to selling complex goods and services. The pricing engine supports price lists, volume discounts and bundles. There is rudimentary support for attribute-based pricing. The product supports a one-time price and a recurring price per order line.

Apparound was able to demonstrate editing a large quote and generation of a large proposal. Proposals and contracts can be generated in PDF but not in Microsoft Word. Apparound has added deep discounting and approvals since the last demo shown to Gartner. Capture of one-time payments, deposits and planning of installment payments are all supported.

The Apparound mobile end-user UI is fast and easy to use. The platform is quite flexible, with support for adding custom objects and extending existing objects. However, changes and extensions to the application logic often require scripting. Apparound consultants develop JavaScript code outside of the tool and then upload it. The product lacks a state workflow designer.

CloudSense

CloudSense CPQ is best suited to companies in the communications, media, energy, data center and logistics industries running Salesforce CRM. It integrates with Salesforce Sales Cloud for direct sales and Salesforce Partner Communities for resellers. The application has a mobile UI that works when disconnected from the internet. CloudSense integrates with both Salesforce Commerce Cloud and Salesforce Customer Communities for self-service commerce. It also provides APIs for integration with a custom digital commerce UI. The APIs are built on Heroku and were fast in the demo shown to Gartner.
CloudSense CPQ supports textual search for products, guided product recommendation, import of products from Excel and filtering of selectable products based on eligibility rules. A hierarchical product catalog with product comparison and faceted search can be exposed during the configuration of a solution. The product supports selling and managing subscriptions, although order stacking is not supported, and renewals and amendments are not as easy to use as in some competitors' solutions and are slow to launch. The product is not suited for selling complex manufactured goods because it lacks features such as shipping, 3D visualization, CAD integration and integrations with manufacturing ERP systems.

The configurator uses a condition/action rule engine and supports aggregation/consumption rules, reusable subassemblies and rules that query the transactional context. It is one of only a few products that supports multiple variants of the configuration UI for each product model (for sales and technical presales, for example). Solution configurations enable multiple configurable products to be quickly assembled into a marketing offer. Launching the configurator took between seven and 15 seconds for relatively simple offerings in the demo shown to Gartner. The pricing engine has good support for price lists, sales agreements, promotions, bundles, volume discounts, discount approvals and a basic explanation of how a price was calculated.

CloudSense was able to demonstrate editing a very large transaction for the first time this year in its demo to Gartner. Repricing the whole 1,000-line transaction took several minutes, but subsequent incremental repricing took about 11 seconds. The product can quickly generate large and complex proposals. Document templates are edited in Microsoft Word. Contract redlining is provided by the integrated CloudSense customer life cycle management solution.

The product has an excellent order decomposition and orchestration engine. It supports changes to orders while in fulfillment, subject to customized point-of-no-return logic. It has prebuilt integration with AppNexus Open AdStream, Facebook Ads, Google Ad Manager, Google AdWords and The Trade Desk for advertising sales.

CloudSense leverages the comprehensive extensibility, workflow and analytics features of the Salesforce platform. The product does not include a state workflow engine. End-user response times were mixed in the demo shown to Gartner. CloudSense is gradually shifting slower operations from Apex to Heroku. The new pricing service appears to be much faster but is not enabled by default and must be explicitly activated. Gartner clients should carefully evaluate end-user response times and verify that the new, faster components do not sacrifice any critical features.

**Conga**

Conga (formerly Apttus) provides a broad set of CPQ capabilities that are suited to most industries selling across all channels on the Salesforce platform. Conga CPQ integrates with Salesforce Sales Cloud and Salesforce Community Cloud. Companies running Microsoft Dynamics 365 have the option of integrating with Conga running on Salesforce, although few are doing this today. Although it is possible to export a transaction to Microsoft Excel for offline working, only a fraction of the application’s functions are supported when disconnected. Self-service digital commerce is built on the same platform as the other channels. A Salesforce 1 UI enables mobile devices.
Product selection is supported by a B2C-style sales catalog with faceted search, product comparison and textual search. Conga CPQ provides a robust UI for rapid order entry and displays both one-time and recurring list prices prior to product selection. Prior configurations can be saved as private or public favorites. The product supports selling diverse subscriptions including out-of-the-box workflow for renewals, amendments, splits, swaps and terminations, plus good support for subscription ramps. However, initiating an amendment or renewal was slow (15 seconds or more) in the demo shown to Gartner. The pricing data model is one of the richest of all the vendors evaluated, with support for multiple charges per order line with any price type. Order stacking is not supported.

The configurator has a condition/action rule engine with good support for most advanced rule types, inheritance of model attributes and reusable subassemblies. However, the configuration UI layout is generated by the application and is not as flexible as that offered by some of the other products featured here. 3D visualization is supported by embedding a partner such as CDS Visual, KBMax, Siemens or Threikit. Out-of-the-box pricing is among the best we evaluated for this report, with robust support for list pricing, attribute-based pricing, promotions, coverage pricing and price waterfall. Sales tax is calculated by a productized integration to Avalara or Vertex.

For deal negotiation, Conga supports line grouping, goal-seeking price adjustments, discount approvals, proposal generation and contract redlining. In the demo shown to Gartner, displaying a very large quote took about 15 seconds and pricing that quote took about a minute. The product was able to generate a 100-page proposal in about 30 seconds.

Conga offers a separate order decomposition and orchestration engine that was not evaluated for this report. There is out-of-the-box support for tracking and changing orders. The product has deep out-of-the-box integration with SAP for synchronizing item definitions, bill of materials (BOM) structure and configuration rules from the SAP Variant Configurator. It also supports inventory checks and sending orders to SAP.

Conga is largely built on the Salesforce platform and uses standard Salesforce capabilities for extensibility. However, some heavyweight processing is offloaded to services running on Microsoft Azure. Slow performance was a recurring issue in the demo shown to Gartner and has also been reported by Conga customers, especially for complex products and rules. The latest product release allows customers to disable capabilities to improve performance. Gartner clients considering Conga should verify acceptable application response times in a realistic custom demo that reflects real-world complexities. They should also speak to Conga references with similar requirements to confirm they are achieving good response times in their production environment.

FPX

FPX CPQ is best suited for selling complex manufactured products. The company acquired Intelliquip, a specialist CPQ for fluid handling equipment, at the end of 2019 and has integrated the admin of the two products at the time of writing. For this report, we evaluated the core FPX product. That product supports the direct sales channel through integrations with Microsoft Dynamics 365 CRM, Salesforce Sales Cloud and SAP Sales Cloud. FPX supports a disconnected mobile client, although users have to explicitly select the quotes they want to work with offline. An integration with Salesforce Partner Communities enables the reseller channel. FPX integrates with third-party digital
commerce platforms such as Adobe Magento or SAP Hybris to enable the self-service digital commerce channel.

Products are selected using a new graphical catalog UI with text search. It is also possible to rapidly enter SKUs and quantities, reorder favorite configurations, or import a list of products and quantities from an Excel spreadsheet. Support for subscription ordering is limited, and Gartner does not recommend FPX for selling services or solutions including services.

The configurator has a powerful solving rule engine. The configuration UI layout is generated by the application and is not as flexible as those offered by some other products featured here. FPX supports a single instance of a child subassembly but does not currently support iterations of child subassemblies. Integrations with ATLATL and CDS Visual enable 3D visualization, CAD generation and embedding of product images in the proposal document. Out of the box, the pricing engine supports price lists, cost plus, bundles, attribute-based pricing and basic volume discounts. Other types of price calculation can be implemented using formula-based admin screens.

FPX has excellent support for grouping transaction lines within a transaction and generates approval emails and proposal documents. In the demo shown to Gartner, it was able to edit a very large quote and generate a very large proposal with good response times. The product supports goal-seeking price adjustments and electronic signature via integration with Adobe Sign or DocuSign.

End-user response times were fast during the demo shown to Gartner. The SaaS admin UI is intuitive. Integration with SAP ERP is not yet available as part of the cloud product. The cloud product also does not support the addition of custom objects.

Infor

Infor CPQ is best suited for sellers of tangible goods, especially those running Infor ERP. Direct sales users are supported by integrations with Salesforce Sales Cloud and Microsoft Dynamics 365. There is no integration with Salesforce Partner Communities. Instead, resellers can directly log into Infor CPQ. The Infor Rhythm B2B eCommerce product integrates with Infor CPQ and provides a self-service sales catalog and check-out flow.

Products are chosen using a graphical sales catalog with faceted search. Product comparison, upload of products from Excel and rapid order entry are only available in the self-service eCommerce UI. Infor CPQ is not recommended for selling subscriptions.

The configurator has a powerful condition/action rule engine. It supports inheritance of model attributes and reusable subassemblies. 3D visualization is provided by a white-labeled, productized integration with a third-party visual configuration tool. All pricing logic must be implemented using price lists, formulas and custom objects. The pricing framework appears to be flexible enough to meet most requirements.

Support for deal negotiation is limited compared to other products featured here. Because Infor CPQ cannot handle transactions with more than 1,000 lines, Gartner clients should confirm that Infor can support their largest transactions. However, it can quickly generate a complex proposal.
Discount approvals are well supported. There is no support for goal seeking price adjustments, intelligent price recommendations, electronic signature or contract redlining.

Infor CPQ has a productized integration with Oracle E-Business Suite ERP, Infor ERP and Microsoft Dynamics AX.

The Infor CPQ platform supports custom objects, state workflow, rules-based scripting and analytics. The web admin UI for pricing and configuration rules was introduced in 2020.

**KBMax**

KBMax sells a plug-in configurator for Salesforce CPQ and a stand-alone CPQ product. This report evaluates the stand-alone product.

KBMax CPQ is a good option for companies that need a visual configurator for complex manufactured goods. It has a productized integration with Salesforce Sales Cloud for the direct sales channel. The reseller channel is enabled by an integration with Salesforce Community Cloud, or KBMax can be accessed as a stand-alone application. It supports “skinning” the UI to match the branding of the reseller and can be exposed as a punch-out quoting tool in the reseller’s custom portal. The KBMax visual configurator can be embedded in a third-party self-service digital commerce platform where all functionality is accessible through REST APIs. The UI is responsive and works well on mobile devices.

KBMax delivers a flexible toolkit for building visual quoting applications. Most functionality is implemented using the “Snap” visual block programming tool, which is very powerful but is not suitable for some nontechnical business users.

Product selection is enabled by a searchable, hierarchical product catalog with faceted search and product comparison. KBMax CPQ has no out-of-the-box support for selling subscriptions. There is excellent native support for 2D and 3D visual configuration, as well as productized integration to CAD generation systems.

The configurator combines a flexible schema and UI with Snap for defining logic. Nested subassemblies and attribute inheritance are supported. Most pricing logic must be implemented with custom table look-ups or Snap.

All discounting and approval logic is implemented in Snap. There is flexible support for email and document generation. KBMax was able to demonstrate the generation of a very large proposal in about 70 seconds, and showed a very large transaction working with good performance. There is no out-of-the-box support for electronic signature, contract redlining, goal-seeking price adjustments, payments or intelligent price recommendations.

ERP integrations can be built using a productized integration with Salesforce MuleSoft.

The KB Max platform delivers good end-user response times and one of the better user experiences evaluated for this report. The schema, logic and UI can be easily customized and there is an excellent state workflow engine underpinning the business logic.
Oracle

Oracle CPQ is best suited to enterprise-scale implementations, particularly where the company has other Oracle software assets such as Oracle E-Business Suite ERP and Oracle Order Management Cloud. The direct sales channel is supported by integrations with Salesforce Sales Cloud, Microsoft Dynamics 365 CRM and Oracle CX Sales. The product integrates with Salesforce Partner Communities and Oracle CX Sales for the reseller channel. Deep integration with Oracle CX Commerce delivers the best multichannel quoting and ordering solution evaluated for this report. The modern, responsive UI works well on mobile devices.

Product selection is supported by a basic hierarchical catalog, rapid order entry, import from Microsoft Excel and product search when adding a transaction line. Oracle CPQ has some ability to filter products based on eligibility rules. It provides robust support for subscription ordering, including renewals, amendments, suspends, terminations, order stacking and subscription billing by an integration with Oracle Subscription Management Cloud. There is a productized integration with ATLALT and CDS Visual for 3D visualization and CAD generation.

The configurator uses a condition/action rule engine. Multiple configuration UIs are allowed per product, and Oracle CPQ has one of the better WYSIWYG configuration UI designers. The product supports reusable subassemblies for configuring complex engineered products and bundles of subscriptions. The out-of-the-box pricing capabilities are limited. Almost all pricing logic must be implemented by the customer using formulas, scripts and custom tables, for which there is no user-friendly admin UI for nontechnical users.

Deal negotiation is supported by easy-to-use deal metrics and integration with Oracle’s machine learning services for price optimization. Oracle was able to demonstrate a very large transaction and a very large proposal with good response times. The product also supports native contract redlining and electronic signature via an integration with DocuSign.

Oracle CPQ provides the best integration available with Oracle E-Business Suite ERP. This includes item and BOM synchronization, inventory check, embedding the Oracle E-Business Suite configurator within the Oracle CPQ UI, placing orders, and tracking order status. Oracle CPQ also offers packaged integrations with Oracle ERP Cloud, Oracle Order Management Cloud, Oracle JD Edwards and Oracle Service Billing.

Oracle CPQ’s technology stack is proven to work at enterprise scale, but the admin UI is outdated compared to that of its competitors featured here. The product includes a powerful state workflow engine to manage the states of transactions and transaction lines.

Pricefx

Pricefx CPQ is an option for companies that sell simple products and that use the powerful price optimization and management capabilities the vendor delivers on the same platform. Pricefx CPQ integrates with Microsoft Dynamics, Salesforce Sales Cloud, SAP C4C Sales and Sugar CRM. Resellers are supported by embedding the quoting UI within Salesforce Community Cloud. Pricefx lacks a self-service digital commerce solution of its own, but it is possible to connect the Pricefx
pricing engine to SAP Commerce Cloud and others using published APIs. The modern, responsive UI works well on mobile devices.

Product selection is by searching inside a simple hierarchical table of products or by searching for the name or SKU. It is also possible to import a list of products from Excel. Pricefx is the one of the first products in this report to offer machine-learning-driven product recommendations based on needs analysis. The product has limited subscription selling capability. It also lacks out-of-the-box capabilities for selling complex tangible goods such as 2D and 3D visualization, CAD integration, and shipping.

The Pricefx configurator is one of the least capable evaluated for this report. Product models are implemented as custom objects with Boolean hide/show rules on the attributes and attribute values. The UI is not as flexible as those of others in this report. The admin environment is not suitable for nontechnical business users. The product has powerful out-of-the-box pricing capabilities such as list prices, cost plus, sales agreements, promotions, bundles, rebates and price waterfall.

Quote negotiation showcases Pricefx’s price optimization abilities plus an intuitive transaction line grouping mechanism. Emails are generated from an HTML template. Proposals are generated from a Word template. Other quote negotiation features must be implemented for each customer using the tooling provided. There is no productized support for redlining or goal-seeking price adjustments. Pricefx was unable to edit a large transaction or generate a large proposal document in the demo shown to Gartner. Gartner clients should verify that Pricefx supports their largest and most complex quotes.

Pricefx has productized integrations that send orders to Microsoft Dynamics and SAP. There is no support for order tracking and management.

Although Pricefx lacks the out-of-the-box features offered by others in this report, it is flexible and can be customized to meet most customer requirements by adding schema, logic, UIs and analytics. Custom logic can be implemented as formula or Groovy script. A basic implementation of the CPQ software can be quickly set up with product, customer and pricing data using an accelerator package. Having price management, price optimization and CPQ running out of the same platform is a significant competitive differentiator.

**PROS**

PROS Smart CPQ is best suited for selling manufactured goods, especially when integrated with its price optimization solutions. The direct sales channel is supported by integrations with Microsoft Dynamics 365 CRM and Salesforce Sales Cloud. This includes support for deploying CPQ through a Microsoft Power App or a Salesforce Force.com UI if the customer does not have or want a full-blown CRM. The reseller channel is supported by an integration with Salesforce Community Cloud. PROS Smart CPQ offers one of the best examples we evaluated of a punch-out quoting UI that can be embedded into a reseller’s web portal. Mobile devices are supported by a Salesforce Mobile UI. PROS uses Salesforce Customer Communities for self-service commerce and provides APIs for integration with third-party digital commerce platforms.
The product selection capabilities of PROS Smart CPQ were among the best we evaluated for this report. These include a highly usable sales catalog, product search, faceted search, product comparison, eligibility filtering, an import of products from Excel, favorite configurations and needs analysis flows whose recommendations can be determined by either rules or a machine learning algorithm. The price paid by the customer is shown in the catalog prior to adding to the cart. PROS Smart CPQ also offers the ability to locate and select spare parts from a CAD drawing.

PROS lacks productized support for selling subscriptions. Its schema supports multiple pricing buckets per transaction line that can be purposed for storing a one-time charge and a recurring charge, but this is implementation work. Renewal, amendment and termination flows must be implemented for each product sold, although some reuse of the custom logic is possible by linking to a parent model.

A solving configuration rule engine and support for reusable subassemblies, actionable conflict messages, autocompletion of configurations, and robust BOM and routing rules generation make PROS Smart CPQ a serious option for selling complex manufactured products. PROS also has native support for 3D visualization of configured products using the Unity graphics engine, although this was slow to launch and does not offer a business-admin-friendly mechanism for associating the graphics with the configuration model elements. The configuration UI layout is generated by the application and is not as flexible as that offered by some other products. Out-of-the-box pricing capabilities are limited to list pricing and cost-plus mark-ups. All additional pricing logic must be implemented using formulas and pricing matrices. Multicurrency quotes are supported.

The transaction editing UI is fast, easy-to-use and includes powerful bulk update and goal-seeking price adjustment capabilities. The application relies on the native approvals workflow and email generation of the CRM platform. It integrates with Adobe Sign and DocuSign for electronic signature. Document templates are edited in Word. In the demo shown to Gartner, PROS Smart CPQ was able to edit an extremely large quote with good application response times. It was also able to generate a very large proposal within 30 seconds. Customers that select PROS for price optimization and management will benefit from the preintegrated intelligent pricing and discounting recommendations.

PROS Smart CPQ has a robust integration with SAP for synchronizing parts, BOMs and rules, and for placing orders. However, the product relies on back-office systems to track or change the order after it is placed.

PROS Smart CPQ is built on a hybrid architecture where the administration UI, associated objects and rule engines run in Microsoft Azure. The product does not include a state workflow designer. The end-user UI, document generation, approvals workflow and transactional schema run on either the Microsoft Dynamics or the Salesforce platform. This architecture provides a consistent UI experience within the CRM container with very good response times.

**Salesforce (CPQ)**

Salesforce CPQ should be considered by manufacturing and high-tech companies running Salesforce for CRM. It integrates with the Salesforce Sales Cloud and Salesforce Service Cloud for...
direct sales, and Salesforce Partner Communities for resellers. Mobile devices are supported by the Salesforce Mobile App. Salesforce released the first version of its productized integration between Salesforce CPQ and Salesforce B2B Commerce in 2020. Note that the two products currently use different schema and logic for many overlapping functions.

The product selection UI is a basic, searchable list of products. There is no B2C-style hierarchical sales catalog, faceted search or product comparison for the direct sales and reseller channels. The product supports import of a list of products from Excel and reordering of favorite configurations. Salesforce CPQ is suitable for selling most types of subscriptions and usage-based services. Consumption schedules support variable usage-based pricing. There is excellent support for negotiating pricing ramps. The application handles basic renewal flows, but amendments and terminations are not as robust or usable as those of competitive solutions. Salesforce Billing enables generation of a recurring invoice based on sold subscriptions.

The standard Salesforce configurator has a condition/action rule engine that supports reusable subassemblies. The end-user experience is clean but basic. The layout is generated by the application and is not as flexible as some other products. Salesforce has productized integrations with KBMax and Threekit for 3D visual configuration. In these integrations, the visual configurator replaces the Salesforce CPQ configuration engine and pricing rules. Another partner, Veloce, offers a high-performance constraint-solving rule engine to replace the standard configurator. Enosix, provides a configurator plug-in that emulates the SAP Variant Configurator. The pricing engine supports list pricing, volume discounts and coverage pricing. Sales tax can be calculated by a productized integration with Avalara. There is no out-of-the-box support for promotions. All other types of pricing must be implemented using formulas and custom objects.

Deal negotiation is robustly supported by line grouping, goal-seeking discounts, Einstein Analytics for quotes and pricing, integration with Vendavo and Zilliant for price optimization, discount approvals, and integration with Xactly for estimating sales commission. In the demo shown to Gartner it took 10 seconds to reprice a very large quote and about 40 seconds to save it. Salesforce provides a standard document generation tool with a WYSIWYG template editor. For advanced proposal and contract generation, Salesforce includes a limited license of Conga Composer (branded “Conga Quote Generation for CPQ”) for free with the high-end edition of the CPQ product. The Conga document generator was able to create a very large proposal in about 30 seconds. Electronic signature is supported through integration with Adobe Sign, Conga or DocuSign.

Salesforce CPQ requires more mouse clicks than most of its competitors to navigate between pages, validate, reprice and save. Gartner clients should evaluate whether it is suited to situations where efficiency is important (such as a B2C contact center or rapid entry of large B2B customer orders). While the core Salesforce CPQ product is adequate for many simple scenarios, it must be combined with partner plug-ins to support more complex use cases, introducing additional cost and complexity. The product leverages the features of the Salesforce platform to support all the extensibility requirements evaluated for this report. Integrations with fulfillment and billing applications can be implemented using the Salesforce MuleSoft product.
Salesforce (Vlocity CPQ)

Acquired by Salesforce in June 2020, Vlocity sells industry-specific applications that extend Salesforce CRM. CPQ capabilities feature in the Vlocity offerings for the telecommunications, media, energy, insurance and health insurance industries. The vendor ranks highly for subscription management. The product extends standard features of Salesforce Sales Cloud and Salesforce Partner Communities to support the direct sales and reseller channels. Customers can assemble a self-service commerce experience using APIs, UI design tools and templates (for example, an integration with PayPal’s Braintree payments) provided with the product. The mobile UI is excellent, and the admin UI for defining and simulating the mobile end-user UI is the most comprehensive and usable one evaluated for this report.

Product selection is achieved via a product list with faceted search, a multilingual textual search for products or a guided selling tool. The product has comprehensive support for product eligibility rules. Vlocity supports selling subscriptions, including multiple charge types per transaction line, and prebuilt workflows for renewals, moves, amendments, upgrades/downgrades and terminations. It is not recommended for selling complex, manufactured goods because it does not support visualization or integration with CAD systems. In addition, it only captures shipping details at the transaction header level in the out-of-the-box product.

The configurator supports condition/action rules, attribute inheritance and reusable subassemblies. The out-of-the-box quoting/configuration UI flow is not as intuitive as others. The flexible pricing engine supports attribute-based pricing, promotions, bundles, sales agreements and a price waterfall.

Based on the 2019 and 2020 demos provided to Gartner, we are unconvinced that Vlocity can deliver acceptable application response times when working with a large number of transaction lines. It is possible to generate a very large proposal, but the customer is expected to write custom script to extract the data for the report. Discount authority and approvals are built on standard Salesforce rules and workflows. There is no support for line grouping or goal-seeking price adjustments. Contract generation and redlining are supported by the Vlocity contracts module.

The built-in order decomposition and orchestration capabilities are the best we evaluated for this report. Vlocity has recently improved support for amending and canceling in-flight orders.

Vlocity functionality builds on and extends standard Salesforce objects and uses all of the powerful extensibility, workflow, analytics and collaboration functions of the Salesforce platform. It provides unique capabilities for declarative, guided process flows (“OmniScript”), flexible UIs (“Cards”), interface implementations and a library of plug-and-play, industry-specific features. Gartner regularly hears complaints about response times in our inquiry calls. In the demo shown to Gartner, common actions such as creating a quote, adding a bundle product to the cart, selecting an attribute during a configuration session and repricing were slow. This is partly mitigated by running some actions in the background. Ask to see your most demanding use cases demonstrated in a standard Salesforce environment to verify acceptable response times.
SAP

SAP CPQ is well suited for companies that sell simple or complex manufactured products through multiple channels, especially if they use SAP S/4HANA or SAP ERP. It integrates with a wide range of CRM platforms (including Microsoft Dynamics 365 CRM, NetSuite, Salesforce Community Cloud, Salesforce Sales Cloud, SAP Sales Cloud, Siebel and SugarCRM). The CRM integration is flexible and declarative. It is possible to connect one product instance to multiple CRMs. The product provides good support for direct sales and reseller channels on Windows and mobile devices. Self-service digital commerce is supported by an integration with SAP Commerce Cloud.

Product selection is a strength of SAP CPQ. It provides a rich sales catalog, powerful search, product comparison, rapid order entry, eligibility checking, saved favorite configurations, prepick pricing and guided product recommendations that can be driven by attribute filtering rules or its own machine learning algorithms. Support for subscription ordering workflows continues to be a weakness, with an unintuitive UI flow for renewals (compared to other products) and minimal support for amendments and cancellations. Support for one-time and recurring charges is part of the standard product. The product integrates with SAP Subscription Billing.

The configurator has a flexible UI and support for reusable subassemblies. The condition/action rule engine is one of the most powerful and flexible evaluated here. SAP CPQ can be integrated with SAP Visual Enterprise for 3D visualization. It is also possible to use existing SAP Variant Configuration and SAP Advanced Variant Configuration models from SAP S/4HANA and SAP ERP in real time with good response times. Price lists, attribute-based pricing and promotions are supported. Most other pricing requirements require implementation using formulas and custom objects. It is possible to execute pricing logic residing in SAP ERP or SAP S/4HANA in real time.

Deal negotiation is enhanced by machine learning algorithms that recommend discount levels out of the box with no customer-specific tuning. The vendor also offers integrated incentive compensation estimation and contract redlining as add-on modules. Goal-seeking price adjustments and capture of payment details are supported. In the demo shown to Gartner, it was possible to edit a very large quote and the product was able to successfully generate a very large proposal in less than 30 seconds.

The product offers extensive, productized integrations with SAP S/4HANA, SAP ERP, SAP Commerce Cloud and several other SAP offerings.

Both the runtime and admin UIs are among the best evaluated here. Application response times are generally fast. It is possible to create custom objects in the application, but not to relate them to other objects. Control over the standard UIs is limited. An IronPython scripting tool is provided, as well as a powerful state workflow engine. The product is integrated with SAP Analytics Cloud.

Tacton

Tacton CPQ is best suited for heavy manufacturers with complex products and visualization requirements. The product includes some lightweight CRM capabilities of its own and integrates with Salesforce Sales Cloud or Microsoft Dynamics 365. The integration with CRM is not as seamless and easy as that of other solutions. Resellers are supported by an integration with
Salesforce Partner Communities. The product exposes a comprehensive set of APIs upon which a customized self-service UI could be built.

Product selection is enabled by a simple, tabular sales catalog with faceted search and product search. The product is not recommended for selling subscriptions.

Tacton CPQ has a powerful constraint-solving configuration rule engine, excellent product modeling capabilities, built-in visualization (2D, 3D and mixed reality), CAD integration, reusable subassemblies, and out-of-the-box engineer-to-order workflows. The 3D visualization is particularly impressive, with support for photorealistic rendering of lights and shadows, and user interaction with the 3D image. All pricing logic must be implemented using price lists, formulas and custom objects. The pricing framework appears to be flexible enough to meet most requirements. Neither configuration rules nor pricing rules support date effectivity, which makes it more difficult for companies to plan for changes to their products and pricing.

In the demonstration provided to Gartner, the product was easily able to handle a very large transaction and to quickly generate a very large proposal. Goal-seeking price adjustments, discount authority and price approvals are supported. There is no support for contract negotiation and redlining.

Tacton CPQ includes deep integration with SAP ERP. Items, BOM definitions and SAP Variant Configurator rules can be synchronized between the systems. It is possible to check inventory, place orders, track orders and change inflight orders.

The application architecture and extensibility are among the best evaluated here. Performance of the demo shown to Gartner was excellent. Both the runtime UI and administration UI are clean and intuitive. The platform includes a powerful state workflow engine that controls every object in the system. A formula can be used to calculate the value of an attribute or be triggered by an event in the state model. Integrations can be defined and then attached to events in a state model. Logic can be extended with JavaScript.

**Vendavo**

Vendavo CPQ Cloud should be considered when combined with the purchase of the Vendavo price optimization and management solution. It is best suited to selling a limited number of simple (or lightly configured) tangible products or simple services. The direct sales channel is supported by integrations with Infor, Microsoft Dynamics 365 CRM, Salesforce Sales Cloud, SAP Sales Cloud and SugarCRM. Direct sales users can take advantage of the mobile-optimized quoting UI. Reseller channel users can launch Vendavo CPQ Cloud from the Salesforce Community Cloud. Customers can build their own self-service UI on top of the services provided by the platform.

Product selection capabilities are limited when compared to other vendors in this report. Vendavo CPQ Cloud is not recommended for selling recurring services or for selling complex service products that are amended over time.

The configurator supports basic condition/action rules, but lacks a flexible UI, reusable subassemblies and support for model attributes. 3D visualization and CAD generation are
supported via an integration with CDS Visual or Threekit. The product supports list pricing, volume discounts, sales agreements and sales tax calculation via an integration with Avalara. Other types of pricing must be customized using formulas. The integration with Vendavo price optimization enables powerful deal optimization functions and appears easy to use. Price lists can be managed using Vendavo PricePoint.

Vendavo CPQ Cloud supports editing very large transactions, and generation of a large proposal was fast during the demo shown to Gartner. Discount authority and approvals workflow are basic, requiring rules to define the thresholds and flows. There is no support for transaction line grouping, goal-seeking price adjustments or redlining of a sales contract. Electronic signature capture is supported by an integration with DocuSign.

Vendavo CPQ Cloud runs on its own technology platform. The recent addition of support for custom tables was a significant enhancement. However, the product lacks support for server-side scripting and state workflow.

Yagna iQ

Yagna iQ CPQ is best suited for high-tech companies that sell relatively simple products through a partner network. It integrates with both Microsoft Dynamics 365 and Salesforce Sales Cloud for direct sales. In the demo shown to Gartner, it consistently took at least 30 seconds to launch the CPQ UI from the CRM, rendering the integration unusable. Distributors and resellers are supported by Yagna iQ's own partner management functionality. The process for signing up and managing partners appears robust, but there is no support for reseller agreements and no UI for punch-out ordering. Yagna iQ does not address the customer self-service channel, although there is an extensive set of APIs that can be called by a custom implementation. Anonymous browsing is not supported by the APIs. These APIs were slow in the customized demo shown to Gartner. Yagna recently introduced iOS and Android apps.

The sales catalog supports faceted search and product comparison. Launching the catalog page and every subsequent search took around 10 seconds in the demo shown to Gartner. It is possible to copy a configuration from a previous quote, and there is some support for product eligibility rules that control who can sell what. Yagna iQ includes Zoho as part of its product offering for selling and managing subscriptions, and for billing for all types of products. Zoho provides good subscription management, but the two products are loosely integrated. It is not possible to sell tangible and subscription products in the same transaction.

Yagna iQ has the least capable product configurator reviewed for this report. It is possible to define a flat group of products that can be sold together along with simple “requires” and “excludes” rules. Out of the box, the product supports multicurrency price lists, basic volume discounting and conditional discounting rules. The productized integration with Open Exchange loads currency conversion rates that can be used to calculate prices in a multinational deployment. Beyond that, clients must work with the vendor to add more pricing capability.

It is possible to define margin limits for the entire transaction and identify the required approvers. Proposals can be generated from a Microsoft Word template. The product lacks more advanced features such as intelligent price guidance, electronic signature and contract redlining. Yagna iQ
failed to demonstrate support for a large transaction during its demo to Gartner. Gartner clients should ask the vendor to prove its ability to support large or complex transactions and proposals.

During the demo shown to Gartner, the Yagna iQ CPQ product was consistently slow with response times of between five and 10 seconds the norm. This will seriously impact end-user adoption. That said, our most significant concern is a complete lack of productized extensibility features. Instead, the vendor is willing to enhance the application based on requests from individual customers. This approach is not sustainable as the customer base grows, and companies might experience long lead times to make even simple changes.

**Zuora**

Zuora CPQ is a good option for companies that already use Zuora for subscription billing, or that are looking for a complete quote-to-revenue solution for subscriptions integrated with the Salesforce platform. It integrates with both Salesforce Sales Cloud for direct sales and Salesforce Partner Communities for resellers. The direct sales UI is not optimized for mobile devices. Zuora CPQ provides APIs on which it is possible to implement the self-service digital commerce channel, although the APIs do not allow configuration of products with options and features.

Customers can build their own guided selling flows that automatically filter products based on any attribute in the quote (for example, an enterprise sales flow or SMB sales flow). Products can also be selected from a list with filtering on product attributes or by a textual search. The product is tightly integrated with the Zuora subscription billing solution and has deep capabilities for selling any type of subscription. Subscription contracts can be sold, renewed, amended and terminated. One-time, recurring and usage charges are all supported, along with calculation of monthly recurring revenue (MRR), annual contract value (ACV) and total contract value (TCV). Cross-sell and upsell recommendations are automatically suggested based on actual customer usage data. Revenue recognition for subscriptions is built into Zuora’s platform, which also supports robust order decomposition and orchestration. There are out-of-the-box integrations of financial postings to Oracle E-Business Suite ERP, Oracle NetSuite and SAP.

The configurator has a condition/action rule engine with an easy, intuitive admin UI. It is sufficient for selling service bundles, but it lacks the sophisticated rule types observed in other products evaluated here. The configuration UI layout is generated by the application and is not as flexible as that offered by some other products. The product is not suited to selling complex manufactured or engineer-to-order goods. The pricing engine rules framework is flexible enough to support most requirements but lacks out-of-the-box support for important B2B constructs such as price lists, sales agreements and price explanation/waterfall.

Document generation uses Microsoft Word templates to generate in PDF or Word. Zuora integrates with DocuSign for electronic signature. The vendor did not demonstrate support for a very large quote in its demo to Gartner but was able to generate a very large proposal. Clients should verify that their largest quotes are supported by the tool.

Extensibility is supported by the powerful capabilities of the Salesforce platform. Unlike some other CPQ products on the same platform, Zuora does not have a declarative state workflow designer for
managing the progression of the transaction. However, Zuora supports a wide range of customizations by allowing the implementer to override standard logic with new scripts.

Context

This research evaluates vendors and products based on their ability to support six different use cases leveraging 13 critical capabilities. The use cases for this research were selected based on projects we most frequently hear about from Gartner clients during inquiries, discussions and presentations. The critical capabilities represent the functional abilities most needed to satisfy the use cases.

Gartner vendor product evaluations were made on product functionality generally released and available as of the research cutoff date of 1 June 2020.

Product/Service Class Definition

Configure, price and quote (CPQ) application suites enable sales organizations to automate and optimize the creation of quotes and convert those quotes into the capture of orders. CPQ is part of the larger quote-to-cash business process. Some vendors are building or acquiring CPQ, contract life cycle management, sales performance management, digital commerce (B2B self-service), order orchestration, price optimization and billing capabilities to offer a one-stop solution for the entire process. Leading CPQ solutions support the creation of quotes and capturing of orders across multiple channels of customer interaction (such as direct sales, contact center, point of sale, resellers and customer self-service).

Critical Capabilities Definition

Direct Sales Channel

Integrates seamlessly with one or more CRM platforms to provide a unified UI for direct sales users with no duplicate data entry. It should be possible to explicitly control who can read and update the quote or order. Credit is given to applications that can run disconnected from the network.

The following criteria were evaluated for functional completeness, usability, ease of administration and response times:

- **Integration with Salesforce Sales Cloud.** The CPQ product includes a productized integration with Salesforce Sales Cloud.

- **Integration with Microsoft Dynamics 365 CRM.** The CPQ product includes a productized integration with Microsoft Dynamics 365 CRM.

- **Single sign-on with sales force automation (SFA).** Once set up in SFA, a user can access both SFA and CPQ without a separate sign-on. The user profile is available to rules in CPQ.

- **Create/maintain quotes and orders from account.** It is possible to view, create and maintain quotes and orders in the CPQ solution from the SFA account profile.
- **Create/maintain quotes and orders from opportunity.** It is possible to view, create and maintain quotes and orders in the CPQ solution from the parent SFA opportunity.

- **Quote changes automatically update forecast.** Revenue expected from a quote is automatically included in the SFA sales forecast.

- **Integrates with SFA analytics.** Quote and order data from CPQ is available to analytics and reports in the SFA system.

- **Capture quotes and orders.** Direct sales channel users can create quotes and orders.

- **Transaction team.** Controls the team of sales representatives and sales engineers that can view or edit a transaction.

- **Disconnected.** All runtime functionality is available when disconnected from the internet.

**Reseller Channel**

Exposes all direct sales capability to resellers. Allows resellers to manage their own users and only see their own transactions. Limits what can be sold, and the prices paid, based on a reseller agreement. A punch-out UI enables resellers to embed the vendor’s CPQ UI inside their own website.

The following criteria were evaluated for functional completeness, usability, ease of administration and response times:

- **Integration with Salesforce Community Cloud.** The CPQ product includes a productized integration with Salesforce Community Cloud.

- **Single sign-on with partner relationship management (PRM).** Once set up in PRM, a user can access both PRM and CPQ without a separate sign-on. The user profile is available to rules in CPQ.

- **Create/maintain quotes and orders from account.** It is possible to view, create and maintain quotes and orders in the PRM solution from the SFA account profile.

- **Create/maintain quotes and orders from opportunity.** It is possible to view, create and maintain quotes and orders in the PRM solution from the parent PRM opportunity.

- **Quote changes automatically update forecast.** Revenue expected from a quote is automatically included in the PRM sales forecast.

- **Integrates with PRM analytics.** Quote and order data from CPQ is available to analytics and reports in the PRM system.

- **Capture quotes and orders.** Reseller channel users can create quotes and orders.

- **Delegated user administration for resellers.** Resellers can add, update and delete their own users.
- **Reseller agreements.** Partner managers can create and maintain reseller agreements that control the products the reseller can sell and the reseller’s cost.

- **Transaction privacy for resellers.** Resellers can only see the transactions they created or are assigned to collaborate on. They cannot see transactions created by other resellers.

- **Control data shared with resellers.** The vendor can define which transaction attributes are displayed to resellers (e.g., cannot see margins).

- **Punch-out configuration UI.** The reseller can embed the vendor’s product configuration UI within the reseller’s own web storefront.

- **Different UI skin for each reseller.** It is possible to design a different CPQ UI look and feel for each reseller so the UI blends with their other applications.

**Self-Service Channel**

The product includes a self-service website where customers can directly request quotes and place orders.

The following criteria were evaluated for functional completeness, usability, ease of administration and response times:

- **Anonymous catalog browsing.** An anonymous user can browse the online catalog. UI may be provided by the vendor or a partner via a productized integration.

- **Self-service configuration.** A customer can configure products using a simple, self-service optimized user interface. UI must be provided by the vendor.

- **Customer quote request.** A self-service user can request a custom quote for the cart the user has configured. This is passed to direct sales.

- **Customer check-out.** A self-service user can provide fulfillment and payment information and complete the transaction via the website. UI may be provided by the vendor or a partner via a productized integration.

- **Headless APIs.** All runtime functionality is accessible via web service APIs. The product provides an online catalog of available services plus a demonstration of an end-user UI running over the APIs.

**Mobile**

The direct sales, reseller and self-service UIs are optimized for mobile devices such as tablets and phones.

This criterion was evaluated for functional completeness, usability, ease of administration and response times:

- **UI optimized for mobile.** The end-user interface is dynamically optimized to support the resolution and gestures of the tablet or phone being used.
Select Products/Offers

The product offers a B2C, digital commerce-style sales catalog with search, faceted search, product comparison and needs-based product recommendation, a UI optimized for rapid entry, import from Excel, reuse of favorite configurations, and can limit sellable products based on rules.

The following criteria were evaluated for functional completeness, usability, ease of administration and response times:

- **Amazon-style hierarchical sales catalog.** Products and offers are arranged into hierarchical categories that allow users to locate their desired product by drilling down through the categories. Categories and products are presented in a B2C-like graphical layout.

- **Product search.** Products and offers can be located by a free-text search that matches the product name and description.

- **Product comparison.** Multiple products can be selected and compared side by side.

- **Faceted search.** The catalog supports filtering criteria that are sensitive to the current category (for example, the TV category provides a “screen size” search attribute). Each selection should indicate how many products and offers match.

- **Rapid order entry.** The tool provides a mechanism for rapid, heads-down entry of part numbers and quantities.

- **Import from Excel.** The tool supports bulk import of transaction lines from an Excel file.

- **Product recommendation based on questionnaire.** After selecting and completing a needs analysis questionnaire, the system suggests the best products for the customer. It also identifies how the suggestions are generated (rules or machine learning, for example).

- **Product eligibility enforcement.** The tool defines eligibility rules that limit what categories and products can be sold to the customer based on channel, geography, rep training or customer type. It should be possible to either filter the ineligible product choices, or explain why a product cannot be selected. Product eligibility rules should be enforced by all product selection mechanisms.

- **Reorder previous configuration.** The tool allows users to select a previously configured product to use as the starting point for a new configuration on the current transaction.

- **Prepick pricing.** All product selection mechanisms support transaction- and customer-specific prepick pricing that provides an accurate price to the customer before an item is added to the transaction.

- **Intelligent product recommendation.** Self-learning AI algorithms suggest upsells and cross-sells based on the customer, shopping cart contents, order history, recommendation acceptance history and service usage.
Sell Subscriptions

Subscriptions with recurring pricing can be sold, amended, terminated and renewed. A product should support multiple different prices of different types. It must be possible to place an order for a future dated change and to enforce contractual commitments.

The following criteria were evaluated for functional completeness, usability, ease of administration and response times:

- **Fixed recurring prices.** Prices can be charged on a recurring basis over various time periods (per day, per month or per year, for example).
- **Simple usage-based recurring prices.** Prices can be charged on a recurring basis based on actual usage (for example, per GB or per 1,000 texts).
- **Billing system rate plan.** The CPQ solution can associate a billing system rate plan to a transaction line for complex, usage-based pricing (phone tariffs, for example).
- **Subscription ramps.** It should be possible to negotiate a gradual increase in subscription charges in the first months of a contract, or the gradual ramp down of charges at the end of a contract.
- **Multiple price types for a single transaction line.** A single transaction line can have multiple associated charges with multiple price types. Each charge is calculated by the system and can be manually discounted.
- **Declarative, flexible totals that work for all price types.** Transaction totals can be customized to reflect customer requirements. They work correctly for one-time, recurring and usage-based price types.
- **Renew subscription.** The CPQ solution allows selection of an existing subscription and generation of a renewal order.
- **Amend subscription.** The CPQ solution allows selection of an existing subscription and generation of an amendment order that changes the delivered service and updates the service contract.
- **Cancel subscription.** The CPQ solution allows selection of an existing subscription and generation of a cancel/terminate order that removes the delivered service and updates the service contract.
- **Generate service contract.** The CPQ solution can generate a service contract when the order is fulfilled.
- **Future-dated changes.** The CPQ solution allows the capture of amendments and cancelations that will happen in the future.
- **Order stacking.** The starting state of a future-dated configuration includes changes in any prior pending orders.
■ **Contractual commitments.** The CPQ solution models contractual commitments within the CPQ system, records them in the service contract, and enforces the terms by calculating change and termination fees.

■ **Unbundle, rebundle and bundle breaking.** After a bundle of services is sold, individual services from that bundle can be terminated. If the service is required to qualify for the bundle, the bundle can be split into the individual services outside of the context of a bundle. Existing individual services plus newly planned services can be grouped into a new bundle.

■ **Manage service locations.** The CPQ solution allows the administration/import/real-time integration of the set of possible locations for delivery of a service. A service location can be associated with a configurable service. The service location can define the available options, features and service levels.

■ **Subscription billing.** The CPQ solution is preintegrated with a subscription billing solution from the same vendor that supports both fixed, recurring and usage billing.

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**Sell Tangible Goods**

Complex tangible products can be customized, visualized and sold. Shipping details can be captured and priced. Extra credit is given for generating CAD drawings for inclusion in the proposal and as input to manufacturing.

The following criteria were evaluated for functional completeness, usability, ease of administration and response times:

■ **2D visual configuration.** The configurable product is displayed as a 2D image with all options selected. As selections are changed, the 2D image is automatically updated.

■ **3D visual configuration.** The configurable product is displayed as a 3D image with all options selected. As selections are changed, the 3D image is automatically updated. The user can change the viewing position and rotate the product to see it from any perspective.

■ **Bill of materials (BOM) generation.** The configurator can generate the manufacturing bill of materials from the options selected.

■ **Shipping charges.** Shipping charges can be calculated either from internal shipping rate tables or via a call to an external shipping system. The shipping charge is a function of the weight, route and speed requested.

■ **Visualizations in proposal.** The solution includes 2D and 3D renderings of configured products in the proposal/contract.

■ **Shipping details.** The solution captures shipping details for tangible goods on the order. Orders can be sent to multiple locations by multiple shipping methods.

■ **Generate CAD drawings.** The solution generates CAD drawings of complex products for use by manufacturing.
Configuration

Define the options, features, rules and UI for a product with customizable options. Credit is given to features that enable a nontechnical business user to quickly set up and change products without IT support or duplication of effort.

The following criteria were evaluated for functional completeness, usability, ease of administration and response times:

- **Flexible, channel-specific user interface per product.** The user interface for each product model is easily created without technical skills. Ideally, this is done using a WYSIWYG admin interface. It should be possible to define a different interface for the direct sales and self-service channels.

- **Actionable conflict messages.** When the user selects an option that is not allowed, the system informs them as to why they cannot have that option and suggests ways to fix the problem (by deselecting a conflicting option, for example).

- **Actionable recommendation.** The system proactively suggests additional options or changes. This enables the user to select a suggestion with a simple button click.

- **Delta pricing.** All options are displayed along with the incremental cost of selecting that option. Where there are mutually exclusive options, selecting one option will change the incremental price of other options. The incremental price can be negative.

- **Shopping cart for configuration.** The current configuration is displayed in a shopping cart that lists all of the selected items and their costs. That shopping cart can then be saved to the quote or order.

- **Attribute inheritance.** Configurable options can have attributes (for example, bandwidth, “from” location, “to” location). The attributes of an option are inherited from a shared class (connections). Using classes reduces the maintenance overhead for groups of attributes that are shared across many products or options.

- **Attribute with domain based on a table or web service call.** The domain of an attribute can be retrieved from a custom table or web service call. It is possible to filter the domain based on prior selections. This feature can greatly simplify the management of large domains (for example, the cities where a service is provided).

- **Condition/action rules.** The configurator supports rules of the form: If [Boolean condition], then [perform action].

- **Constraint-solving rules.** The configurator supports rules of the form: Ensure [Boolean condition]. These rules require a more sophisticated rule engine that automatically selects and deselects options to enforce the rule. These rules can be slightly harder to understand than condition/action rules, but they are often more powerful and succinct.

- **Aggregation/consumption rules.** The configurator supports rules of the form: Ensure [aggregated quantity < available quantity]. This powerful technique ensures that finite resources are not overconsumed.
Reusable subassemblies. A configurable model can include other configurable models as subcomponents. It is possible to write rules in the parent model that impact options and attributes of the child models. This feature avoids a lot of duplicate maintenance where a subassembly is used in multiple parent assemblies.

Iterations of child subassemblies. A parent configurable model can support 1 to n instances of the same child subassembly. Each instance is individually configured. This feature enables the configuration of products such as racks of servers that are each individually configurable.

Rules that query the transactional context. Configuration rules can reference attributes of the transactional context (including customer type, geography or customer assets).

Date effectiveness. Each configuration rule and component can have a start date and end date. This enables forward planning of changes and is vital for enterprise-class deployments.

Engineer-to-order workflow. Support a workflow that contacts engineering for approval of technical feasibility and cost estimation.

Pricing

This capability evaluates out-of-the-box pricing capabilities that can be set up and administered by a nontechnical business user.

Note that almost all CPQ products support formula-based pricing and scripting. Those are evaluated in the “Extensibility” critical capability.

The following criteria were evaluated for functional completeness, usability, ease of administration and response times:

- **List pricing.** The system supports the administration, import and execution of list pricing.
- **Cost-plus pricing.** Prices can be calculated by marking up the costs from a cost list.
- **Margin calculation.** The difference between net price and cost is calculated as the margin.
- **One-time prices.** Prices can be charged on a one-time basis for multiple different units of measure (per unit, per case, per dozen or per ton, for example).
- **Volume-based discounting.** A volume discount schedule can be created and assigned to a product or product category in a price list.
- **Attribute-based pricing.** The price of a product is a function of its attributes (color and size, for example). The price adjustments/overrides for each attribute combination are defined in a matrix in the context of a price list.
- **Sales agreements.** Sales agreements can be negotiated with a customer to define the terms of doing business for a period of time (one year, for example). All transactions with that customer automatically respect the negotiated terms in the sales agreement. This should include price adjustments, product eligibility, shipping terms and payment terms.
Promotions. A promotion defines special terms for a targeted group of customers for a period of time. Promotions can be automatically associated with a transaction (for example, because a particular product or combination of products is added to the cart) or manually applied. A promotion could include preferential price adjustments, shipping terms or payment terms. The system should enforce compatibility rules between promotions. Multiple promotions can be applied to a single transaction line (if compatible).

Bundle pricing. Special pricing can apply when a combination of products is added to the cart.

Coverage pricing. The price of a service may be some function of the price of other products that it covers. For example, the price of a consumer electronics warranty is 10% of the net price of the products covered.

Rebates. The system should determine available rebates and include these in the quotation. The impact of the rebates should be incorporated into the margin calculation.

Sales tax. An estimate of sales tax is calculated during quoting or order capture. Sales tax can be calculated either from internal rate tables or via a call to an external sales tax system such as Avalara.

Integration with an external rating service. The system supports customizing a real-time call to an external pricing engine where needed.

Price explanation. An explanation of how each price was calculated can be displayed to the user. This should call out how the list price was calculated and list any discounts that were applied. The cost and margin should also be displayed.

Date effectivity. All pricing rules support a start date and end date. This enables administrators to set up changes in advance and is important for enterprise-class deployments of CPQ.

Propose and Negotiate

The application provides discounting, discount approvals, proposal generation, contract negotiation and electronic signature. We also evaluated support for very large transactions and very large proposals.

The following criteria were evaluated for functional completeness, usability, ease of administration and response times:

- **Large transactions.** The system supports transactions with more than 1,000 transaction lines.
- **Line grouping.** Sales users can group transaction lines for display, reporting and document generation. For example, they can group all lines for the Denver office and all lines for the San Francisco office.
- **Manual price adjustments.** Sales users can enter adjustments to the line item net prices (for example, percentage off, amount off or override).
- **Goal-seeking price adjustments.** Sales users can ask the system to adjust line item pricing to achieve the desired total amount, total discount or total margin. The system should consider discount authority and other constraints when calculating adjustments.

- **Expected sales compensation.** The system displays anticipated sales compensation for the transaction in real time. This is a highly effective way of aligning sales rep behavior to corporate goals. Expected sales compensation is usually calculated by a sales performance management system that is integrated into the CPQ application.

- **Discount authority.** The system defines and enforces discount authority.

- **Intelligent price recommendations.** Intelligent recommendations of target price, floor price and ceiling price are based on historical deals and the business-specified trade-off between revenue and margin.

- **Discount approval.** The system uses a role-based, multistep, parallel approvals workflow for all aspects of the transaction.

- **Email generation.** The system generates an email from a flexible template and sends it to either an internal employee or a customer. This is used for approvals and order status updates.

- **Proposal generation.** The system supports Word and PDF proposal/contract document generation from a dynamic template.

- **Large proposals.** The system generates a large proposal or contract (more than 100 pages) within 30 seconds.

- **Redlining.** The system supports iterative negotiation of a contract between the vendor’s and customer’s legal departments. The basic capability is to identify where the contract has been redlined. The legal team should be able to accept, reject or amend the proposed text. More advanced solutions support a customer-specific clause library that is automatically applied to future contracts.

- **Payment details.** The system securely captures payment instructions for the order. It should be possible to pay by EFT or credit card.

- **Generate sales agreement.** The system generates a sales agreement to enforce any price holds negotiated as part of a transaction.

- **Electronic signature.** The system captures electronic signatures to close a transaction. This is typically achieved via an integration with a partner such as Adobe Sign or DocuSign.

- **Multiuser document collaboration.** Multiple sales users can collaborate on a transaction by simultaneously viewing it and updating it on their screens.

**ERP Integration**

The CPQ solution must have prebuilt integration with leading ERP solutions.
The following criteria were evaluated for functional completeness, usability, ease of administration and response times:

- **Integration with SAP ERP.** The CPQ product includes a productized integration with SAP ERP.
- **Integration with Oracle E-Business Suite ERP.** The CPQ product includes a productized integration with Oracle E-Business Suite ERP.
- **Integration with any other ERP platform.** The CPQ product includes a productized integration with any other ERP solution.
- **Load item definitions.** The CPQ product includes prebuilt integration with enterprise resource planning (ERP) to load item numbers, descriptions and images.
- **Load bill of materials structure.** The CPQ product includes prebuilt integration with ERP to load hierarchical BOM structures and attribute definitions.
- **Load configuration rules.** The CPQ product includes prebuilt integration with ERP to load configuration rules.
- **Check inventory.** The CPQ product includes prebuilt integration with ERP to check inventory levels for products in the catalog or cart.
- **Reserve inventory.** The CPQ product includes prebuilt integration with ERP to reserve inventory for products in the catalog or cart.

**Manage Order**

After an order is captured, it must be decomposed and sent to various fulfillment systems in the correct sequence. The CPQ user can track an order’s fulfillment status and make changes if the order line has not passed its point of no return.

The following criteria were evaluated for functional completeness, usability, ease of administration and response times:

- **Criterion.** The solution includes a description of each criterion.
- **Place order.** The solution includes prebuilt integration with ERP to send an order for fulfillment.
- **Decompose and orchestrate.** The solution includes administration user interfaces and runtime workflow to decompose an order and orchestrate sending it to multiple fulfillment systems.
- **Get fulfillment status.** The solution includes prebuilt integration to synchronize order fulfillment status from ERP and other fulfillment systems.
- **Display order status.** The solution displays order status to CPQ users and customers.
- **Cancel or change inflight order.** The solution determines whether it is still possible to make changes or cancelations to the order. If so, it allows the user to make an order revision and resubmit it for fulfillment.
- **Apply change fees.** The solution calculates applicable change fees or credits when changing an inflight order.

**Extensibility**

Most CPQ implementations require customer extensions to the CPQ product. It must be possible to extend the standard schema, add new objects, build new UIs, create custom-scripted logic and define the state workflow of objects.

The following criteria were evaluated for functional completeness, usability, ease of administration and response times:

- **Criterion.** The solution includes a description of each criterion.
- **Custom tables.** The solution can add custom tables and refer to them in all rules and scripted logic.
- **Custom table relationships.** The solution can relate custom tables to standard tables (one-to-many extension to store shipments for a quote, for example).
- **Extend standard tables.** The solution can extend standard tables with new columns.
- **User interface over a custom table.** The solution can add new UIs to allow nontechnical business users to edit the contents of custom tables. It can define which user roles and user groups can view or edit the contents.
- **User interface over standard table extensions.** The solution can expose extensions to standard tables on the UI.
- **Custom web services.** The solution can declare and implement custom web service interfaces (inbound and outbound).
- **Change standard user interfaces.** The solution can change the layout and “look and feel” of standard UIs.
- **Scripting.** The solution can implement complex custom logic in script or by calling external web services.
- **Customize pricing.** The solution can customize the price calculation logic (as opposed to data).
- **State workflow.** The solution offers a declarative state workflow that controls the actions and attribute properties (for example, hidden or editable) available in each state of the transaction.
- **Analytics.** The solution can add custom charts and graphs to the runtime UI and admin UI of the application using a simple admin tool.
- **Staging of updates.** An administrator can test changes to the application set up and any type of business rules without impacting the production environment. Those tested changes can then be deployed to the production environment with zero downtime.
Use Cases

Direct Sales
A direct sales representative captures a quote or order; negotiates the pricing, terms and conditions; and then places and tracks the order.

Channel Sales
A lightly trained reseller sales representative captures a quote or order, and then places and tracks the order.

Self-Service Sales
An untrained, anonymous B2B customer can select and customize products, add them to a shopping cart, and then request a quote or check-out themselves.

Subscription Management
Subscription products can be customized and sold by either a direct sales rep or the customer directly. After the sale, the services can be amended, terminated or renewed.

Complex Manufacturing
Complex manufactured products can be customized and priced. After the order is captured and signed, it is fulfilled and shipped by an ERP solution.

Solution Selling
Tangible goods and services (one-time or recurring) are sold together to address all of the customer’s needs.

Vendors Added and Dropped

Added:
- Infor

Dropped:
- None
Inclusion Criteria

The inclusion criteria for this Critical Capabilities report are identical to those for the accompanying Magic Quadrant for Configure, Price and Quote Application Suites.

For further details, see the Evaluation Criteria section in the companion Magic Quadrant.

To be included in this body of research, a vendor must demonstrate that it satisfies the following criteria in relation to its CPQ offering:

- **Front-office product.** The product must support the direct sales channel, at a minimum.
- **Current.** The product was generally available for sale on 15 May 2019, without restrictions or special approval.
- **Cloud.** The product is implemented in the cloud, defined as follows:
  - All technology infrastructure is managed in either the vendor’s own data centers or those of a third party that is not the end customer.
  - The vendor implements upgrades as part of the cloud service. Upgrades are not performed by a third party, managed service provider or the customers themselves.
  - The cloud service is licensed on a subscription or metered pay-for-use basis.
  - All major application capabilities (end-user features, administration and customization) are implemented using standard internet technologies and are available in a web browser. (Note: Windows GUI applications running locally or on a central server are not considered a standard internet technology.)
  - Customers cannot modify the application source code. Customization via citizen developer tools and extension via PaaS (partner, vendor or user) or APIs is allowed.
  - A single code line is used for all customers of the cloud service to allow rapid deployment of new functionality by the vendor.
  - The vendor delivers at least two upgrades containing new functionality per annum to all users of the cloud service. Upgrades may be pushed by the vendor or implemented at a time agreed on by the vendor and customer.
- **Core CPQ capability.** The product provides out-of-the-box support for sales force automation integration, product selection, configuration of options, pricing and proposal generation, at a minimum.
- **Growing.** The vendor closed deals with at least five new clients for cloud deployment between 1 April 2018 and 31 March 2019.
- **Enterprise-grade.** The product has at least 5,000 total named users running in the public cloud, in production. The list of customer references provided for the reference survey must include at least three references with more than 100 named users each in the cloud. Those references must confirm the size of their deployment in the reference survey.
- **Viable.** The vendor has at least $5 million in annual CPQ revenue or more than 50 employees.
Table 1. Weighting for Critical Capabilities in Use Cases

<table>
<thead>
<tr>
<th>Critical Capabilities</th>
<th>Direct Sales</th>
<th>Channel Sales</th>
<th>Self-Service Sales</th>
<th>Subscription Management</th>
<th>Complex Manufacturing</th>
<th>Solution Selling</th>
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<td>Direct Sales Channel</td>
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<td>10%</td>
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<td>5%</td>
<td>10%</td>
</tr>
<tr>
<td>Sell Subscriptions</td>
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<td>0%</td>
<td>0%</td>
<td>30%</td>
<td>0%</td>
<td>15%</td>
</tr>
<tr>
<td>Sell Tangible Goods</td>
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<td>5%</td>
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<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

As of July 2020

Source: Gartner (September 2020)
This methodology requires analysts to identify the critical capabilities for a class of products/services. Each capability is then weighted in terms of its relative importance for specific product/service use cases.

Critical Capabilities Rating

Each of the products/services has been evaluated on the critical capabilities on a scale of 1 to 5; a score of 1 = Poor (most or all defined requirements are not achieved), while 5 = Outstanding (significantly exceeds requirements).
Table 2. Product/Service Rating on Critical Capabilities

<table>
<thead>
<tr>
<th>Critical Capabilities</th>
<th>Accenture</th>
<th>Apparound</th>
<th>Conga</th>
<th>CloudSense</th>
<th>FPX</th>
<th>Infor</th>
<th>KBBMax</th>
<th>Oracle</th>
<th>Pricefx</th>
<th>PROS</th>
<th>Salesforce (CPQ)</th>
<th>Salesforce (Vlocity CPQ)</th>
<th>SAP</th>
<th>Tacton</th>
<th>Vendavo</th>
<th>Yagna IQ</th>
<th>Zuora</th>
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<td>KBMax</td>
<td>Oracle</td>
<td>Pricefx</td>
<td>PROS</td>
<td>Salesforce (CPQ)</td>
<td>Salesforce (Vlocity CPQ)</td>
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<td>Vendavo</td>
<td>Yagna iQ</td>
<td>Zuora</td>
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As of July 2020

Source: Gartner (September 2020)
Table 3 shows the product/service scores for each use case. The scores, which are generated by multiplying the use-case weightings by the product/service ratings, summarize how well the critical capabilities are met for each use case.
Table 3. Product Score in Use Cases

<table>
<thead>
<tr>
<th>Use Cases</th>
<th>Accenture</th>
<th>Apparound</th>
<th>Conga</th>
<th>CloudSense</th>
<th>FPX</th>
<th>Infor</th>
<th>KBMax</th>
<th>Oracle</th>
<th>Pricefx</th>
<th>PROS</th>
<th>Salesforce (CPQ)</th>
<th>Salesforce (Vlocity CPQ)</th>
<th>SAP</th>
<th>Tacton</th>
<th>Vendavo</th>
<th>Yagna iQ</th>
<th>Zuora</th>
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<tbody>
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<td>Direct Sales</td>
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<td>3.65</td>
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<td>3.66</td>
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<td>2.03</td>
<td>2.73</td>
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<td>Channel Sales</td>
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<td>2.73</td>
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<td>3.52</td>
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<td>3.61</td>
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<td>2.39</td>
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</tbody>
</table>

Source: Gartner (September 2020)
To determine an overall score for each product/service in the use cases, multiply the ratings in Table 2 by the weightings shown in Table 1.

### Acronym Key and Glossary Terms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>B2C</td>
<td>business-to-consumer</td>
</tr>
<tr>
<td>CAD</td>
<td>computer-aided design</td>
</tr>
<tr>
<td>CPQ</td>
<td>configure, price, quote</td>
</tr>
<tr>
<td>CRM</td>
<td>customer relationship management</td>
</tr>
<tr>
<td>ERP</td>
<td>enterprise resource planning</td>
</tr>
<tr>
<td>WYSIWYG</td>
<td>what you see is what you get</td>
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</tbody>
</table>

### Gartner Recommended Reading

*Some documents may not be available as part of your current Gartner subscription.*

- How Products and Services Are Evaluated in Gartner Critical Capabilities
- Magic Quadrant for Configure, Price and Quote Application Suites
- Innovation Insight for Visual Configuration
- How to Select a Configure, Price and Quote Vendor
- Toolkit: RFP for Configure, Price and Quote Applications
- Best Practices for a Successful Configure, Price and Quote Implementation

### Critical Capabilities Methodology

This methodology requires analysts to identify the critical capabilities for a class of products or services. Each capability is then weighted in terms of its relative importance for specific product or service use cases. Next, products/services are rated in terms of how well they achieve each of the critical capabilities. A score that summarizes how well they meet the critical capabilities for each use case is then calculated for each product/service.

"Critical capabilities" are attributes that differentiate products/services in a class in terms of their quality and performance. Gartner recommends that users consider the
set of critical capabilities as some of the most important criteria for acquisition decisions.

In defining the product/service category for evaluation, the analyst first identifies the leading uses for the products/services in this market. What needs are end-users looking to fulfill, when considering products/services in this market? Use cases should match common client deployment scenarios. These distinct client scenarios define the Use Cases.

The analyst then identifies the critical capabilities. These capabilities are generalized groups of features commonly required by this class of products/services. Each capability is assigned a level of importance in fulfilling that particular need; some sets of features are more important than others, depending on the use case being evaluated.

Each vendor’s product or service is evaluated in terms of how well it delivers each capability, on a five-point scale. These ratings are displayed side-by-side for all vendors, allowing easy comparisons between the different sets of features.

Ratings and summary scores range from 1.0 to 5.0:

1 = Poor or Absent: most or all defined requirements for a capability are not achieved
2 = Fair: some requirements are not achieved
3 = Good: meets requirements
4 = Excellent: meets or exceeds some requirements
5 = Outstanding: significantly exceeds requirements

To determine an overall score for each product in the use cases, the product ratings are multiplied by the weightings to come up with the product score in use cases.

The critical capabilities Gartner has selected do not represent all capabilities for any product; therefore, may not represent those most important for a specific use situation or business objective. Clients should use a critical capabilities analysis as one of several sources of input about a product before making a product/service decision.