

Browse the Book

This chapter outlines the features of SAP Commerce Cloud, including cart management, product recommendations, promotions, and the SAP Commerce Cloud industry accelerators. It also discusses product content management (PCM) and the order management system (OMS).



"Commerce"



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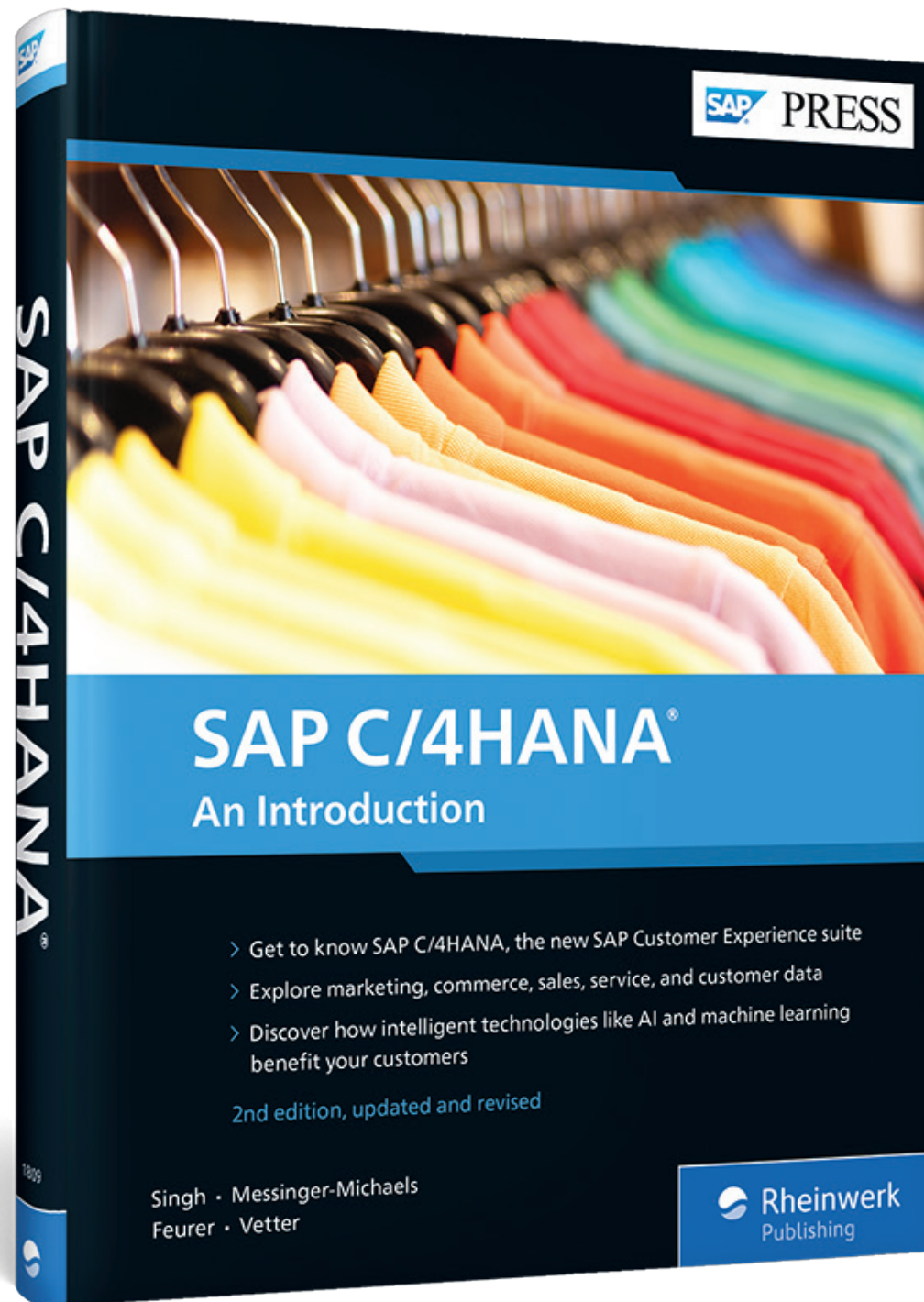
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Chapter 3

Commerce

In omnichannel business, only context makes the difference. SAP Commerce Cloud delivers contextual, consistent, and relevant experiences to attract, convert, and engage customers regardless of the channel or device.

Commerce is one of the most critical components of customer engagement. More and more brick-and-mortar businesses are being replaced by online storefronts, and those that aren't being replaced are avoiding that fate by going online as well. Customers have more choices to buy better and cheaper products online than ever before. Customers are expecting more from online storefronts, and it's becoming increasingly difficult for businesses to keep these shoppers engaged. Customers are connected constantly not only through online storefronts but also through social media, mobile apps, online communities, and so on.

Businesses need next-generation commerce applications backed with omnichannel capabilities to attract, convert, and retain customers. In this chapter, you'll learn about SAP's strategy for commerce and about the key components and capabilities of SAP Commerce Cloud. We'll start by outlining the features of SAP Commerce Cloud from both a business-to-business (B2B) and business-to-consumer (B2C) perspective, and we'll emphasize how those features and functions fit in with the rest of the SAP C/4HANA suite. We'll then discuss core commerce functionality, including cart management, product recommendations, and promotions, in addition to the SAP Commerce Cloud industry accelerators

After that, we'll turn our attention to the process of creating and maintaining product catalogs and digital assets via product content management (PCM), and how to orchestrate orders and manage and negotiate quotes via the order management system (OMS). We'll then talk about customer experience management across all engagement channels, as well as best practices for planning the channels themselves. Finally, we'll outline reporting, analytics, and integrations both within and beyond the SAP C/4HANA ecosystem.

Commerce is the center of many businesses and an important next step for many more, so let's dive into how to make it work for yours.

3.1 SAP's Strategy for Commerce

SAP's strategy for commerce is driven primarily by an ever-changing customer landscape powered by digital transformation. SAP Commerce Cloud helps companies transform their business by focusing on the following three areas:

- **Becoming an omnichannel business**
SAP Commerce Cloud offers omnichannel commerce capabilities to customers. Whether a customer is buying online or calling a customer service agent about issues of placing an offline or online order, the experience for the customer has to be consistent. Sales and service agents—whether in a call center, in an in-store environment, or in the field—can use SAP Commerce Cloud to collaborate with customers on the same storefront, guide them through their online experience, and, ultimately, help them achieve their goals. Additionally, as the number of customer touch points is exploding, innovation and agility are critical factors for business success. SAP Commerce Cloud lets you sell and communicate consistently across online stores, smartphones, tablets, social networks, in-store kiosks, and any Internet-enabled device.
- **Delivering a contextual customer experience**
As a next-generation content management system, SAP Commerce Cloud enables streamlined and intuitive content management. The auto-optimized mix of products based on business goals and contexts delivers unmatched merchandising capabilities to customers with SAP Commerce Cloud. The ability to measure, learn, and improve helps you consistently deliver exceptional customer experiences. Contextual and personalized experiences are key to driving customer satisfaction and loyalty.
- **Unifying the customer process**
SAP Commerce Cloud is integrated with front-office and back-office processes to provide a unified customer experience. From marketing to the online shopping experience, customer information is shared across the processes to deliver accurate, transparent, and timely information to customers when they want it.

In subsequent sections in this chapter, we'll review how the unique capabilities of SAP Commerce Cloud align with SAP's strategy for a next-generation commerce solution.

Note

Throughout this chapter, we default to the name SAP Commerce Cloud because the cloud offering fits best into the overall SAP C/4HANA suite. We should mention, however, that a significant number of customers are still using on-premise installations of SAP Commerce, and these installations have nearly identical capabilities and broadly similar integration paths.

3.2 Commerce with SAP C/4HANA

SAP Commerce Cloud occupies a unique place in SAP C/4HANA because it's the pillar that most often acts as an end user-facing frontend or, often, as a series of connected frontends. SAP Marketing Cloud, SAP Sales Cloud, SAP Service Cloud, and SAP Customer Data Cloud can all exist behind the scenes, driving business processes without necessarily allowing for direct customer interaction. But with SAP Commerce Cloud, transnationality is almost always key. If your business sells anything, then you need a commerce strategy.

What kind of strategy that will be, of course, depends on the business. Are you selling finished, physical goods? Or are your goods digital or configurable? Are you selling services or some combination of goods and services? Although finished physical goods are by far the most common mode of selling, SAP Commerce Cloud offers some base functionality for all of these scenarios.

The clearest line to draw, however, emerges from the distinction between B2C and B2B use cases. In the next section, we'll outline some key features, functionalities, and scenarios for each. It's important to keep in mind that these broad categories don't cover every way of selling or every way of doing business; however, as broad categories, they are probably the single best place to start when figuring out which SAP Commerce Cloud functionality your project and your business will require.

Note

Beginning your SAP Commerce Cloud project from the right template can be enormously helpful. Part of this can be selecting the accelerator that is closest to the functionality with which you intend to launch. If quotes are key to the way you'll do business, then you'll almost certainly want to begin from the SAP Commerce Cloud, B2B accelerator. If you want to use the layout and component types of the apparel

store as a guide, then you may want to start from the SAP Commerce Cloud, B2C accelerator. By making good use of these default settings and broadly applicable templates, you can achieve vastly quicker time to value and then focus on your business differentiators as you build toward future phases and rollouts.

With that being said, this strategy doesn't require hewing too closely to any single accelerator. All the SAP Commerce Cloud accelerators run on a single codebase and share not only a single codebase but also a single set of extensions, allowing accelerators to be combined easily. Your configuration can, for example, use the apparel store's layout for standard shopping and account management, but then move to a quote negotiation process, such as the one in the SAP Commerce Cloud, B2B accelerator as appropriate. The same logic applies to the industry-specific accelerators that we'll discuss later in this chapter.

3.2.1 Business-to-Consumer Commerce

Businesses that sell directly to their end customers are generally referred to as B2C. Web storefronts for such businesses tend to prioritize slick, intuitive presentations and quick response times. B2C commerce experiences were the vanguard of responsive web design (where a single page serves multiple devices, e.g., laptops and smartphones), and some are now leading the way toward progressive web design (where web pages offer app-like design and functionality without the end user actually installing an app).

SAP Commerce Cloud offers two default configurations for B2C customers, the electronics store and the apparel store. They offer different layouts, different web components, and different sample product sets, showing how different kinds of products can be modeled within the SAP Commerce Cloud framework. Apparel products have colors and sizes that are modeled as variants. Electronics products have technical details that are modeled as classification attributes. These storefronts also offer the widest variety of default checkout options, allowing customers to check out as guests, create accounts during the checkout process, or skip straight to the **Order Review** page via **Express Checkout** if they already have an account with default payment and shipping information attached.

Additionally, B2C customers can typically open accounts for themselves, and—just as critically—they can close their own accounts as well. In preparation for the European Union's General Data Protection Regulation (GDPR), the B2C storefronts offer a

Consent Management area where customers can change their preferences for communication and profile tracking, as well as initiate the closure of their accounts if desired.

These features are vital as customers become more concerned with privacy and as the collection of data becomes more targeted. For the first time since the age of big data began, customer information can actually become a liability if you don't collect and control it carefully and intentionally. Conversely, when businesses do offer consent management tools, their customers tend to counterintuitively share more of their personal information. Rather than being in the dark on the one hand, or being creepy on the other, businesses can use the transparent treatment of customer data as an opportunity to build trust, loyalty, and confidence in customers.

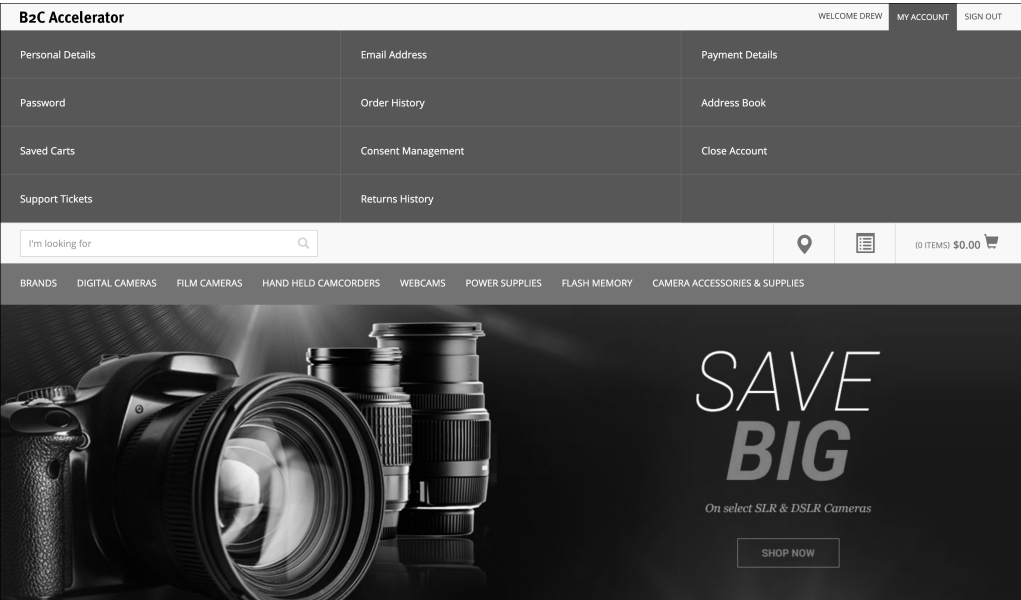


Figure 3.1 The Homepage of the Electronics Store in the SAP Commerce Cloud, B2C Accelerator

Some other key features included in SAP Commerce Cloud, B2C accelerator (shown in Figure 3.1) are as follows:

- Web content management for easy creation and deployment of content in storefronts
- Merchandising, data import, and attribute-rich product details in storefronts

- Intuitive product search based on product attributes and catalog navigation with internationalization support
- Store locator functionality based on various search criteria, such as postal code, city, state, and so on
- Integration for user-generated content through social media augmented product ratings and content to boost sales
- Shopping cart, checkout, and payment functionality support out of the box
- Order management, fraud detection, and customer account management
- Native mobile applications for B2C to offer consistent shopping experience across multiple channels
- Express checkout functionality

3.2.2 Business-to-Business Commerce

Businesses that sell to other businesses, rather than directly to end customers, are generally referred to as B2B. These companies may or may not be concerned with what happens *next*—that is, what the purchasing organization does with the goods or services after they’ve purchased them—sometimes simply selling, and sometimes following the process all the way to the end customer, in what is sometimes called business-to-business-to-consumer (B2B2C). For somewhat more traditional B2B businesses, SAP Commerce Cloud offers a configuration and template called the power tools store.

This configuration isn’t, of course, just for selling power tools. Rather, it’s intended as a starting point for *any* B2B business, but especially those that require their purchasing organizations (the second B in B2B) to at least partially manage their own hierarchies, contracts, and internal accounts. The power tools store offers a full set of sample data for such organizations, and, more importantly, it offers self-service tools for the internal managers and administrators at those organizations to create purchaser accounts; assign budgets, cost centers, and available goods; and approve orders after they’ve been placed.

Beyond that, SAP Commerce Cloud, B2B accelerator offers alternate checkout flows and options, beginning with the ability to pay via purchase order rather than credit card, and to tie that purchase order to an assigned budget and cost center. Alternately, purchasers can initiate a quote negotiation process in which they can request

a price adjustment and then negotiate that request with an approver who can make time-limited offers for the purchaser to accept or reject.

For those B2B purchasers who know exactly what they want, the power tools store also offers features allowing them to add those products to their carts quickly. B2B purchasers can upload spreadsheets containing their desired cart contents or enter a large number of SKUs directly into the storefront via the quick order functionality.

Finally, they can use the reorder functionality to place the contents of a previous order into a new cart, or they can schedule a replenishment at the time of ordering, thereby having the order repeat on a set schedule.

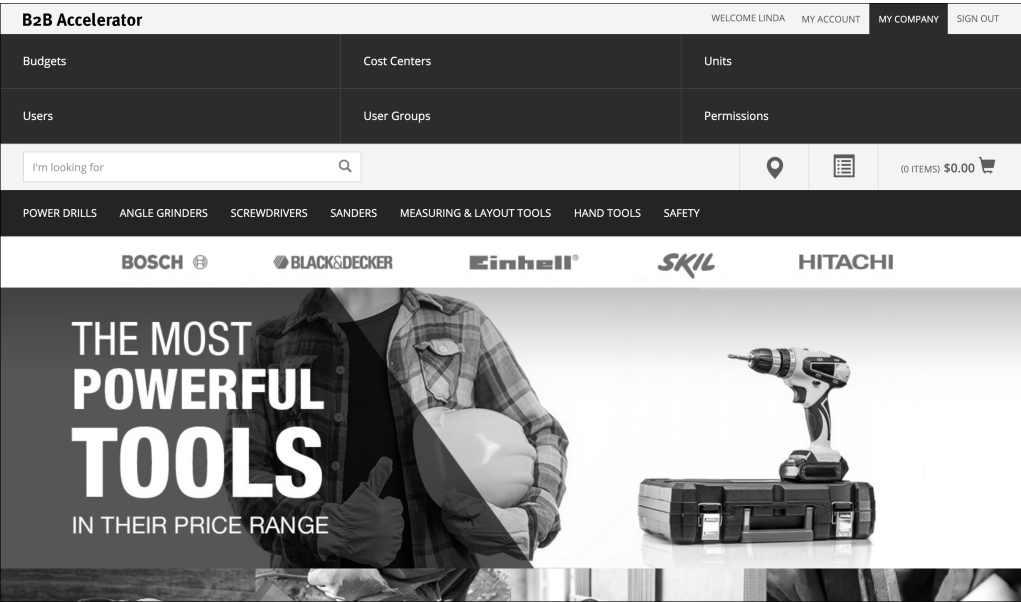


Figure 3.2 The Homepage of the Power Tools Store in SAP Commerce Cloud, B2B Accelerator

Some other key features delivered by SAP Commerce Cloud, B2B accelerator (shown in Figure 3.2) are as follows:

- **Self-service account management**
Customer administrators can set up employees as users, assign required access rights, and set up individual purchasing units within the organization. They can also leverage built-in rules and workflows to configure and set approval rules for

purchasing limits for individual users or purchasing units. Customer administrators can easily manage cost centers and budgets for all the purchases through the B2B shop by using the self-service account management capability.

■ **Online ordering**

In B2B, users can browse product catalogs and place orders online. They can also schedule orders that are replenished automatically if they represent recurring demands. The orders can be set up to go through an internal and external merchant-approval process. Orders can also be tracked online for their exact status, such as shipping details.

■ **Custom catalogs**

B2B merchants can offer customized product catalogs for specific customers. For example, they can customize product lists and product search pages for specific organizations, departments, and customers as required.

■ **Custom pricing**

SAP Commerce Cloud, B2B accelerator supports complex pricing models, which can be set up either in the SAP backend system and replicated to SAP Commerce Cloud or set up natively within the commerce platform.

■ **Price quote request**

Purchasers can submit a quote request to the merchant to negotiate the price for a sales order. Such quotes can be restricted to a minimum order quantity.

■ **Credit management**

Merchants can define credit limits based on various criteria, such as currency, date range, order value, and so on.

■ **Multidimensional products**

Products can be defined based on various attributes, such as size, color, fit, and so on.

■ **Advanced product search**

Users can search for products based on product attributes, such as product code, bar code, text description, and so on.

■ **Punchout support**

An SAP Commerce Cloud B2B site can be integrated with a customer procurement system, such as SAP Ariba. Orders placed on the B2B site can be automatically converted to purchase requisitions and saved in the customer's procurement system.

3.3 Core Commerce

The key components of SAP Commerce Cloud and their benefits are as follows:

■ **Search and navigation**

Before customers can make a purchase, they need to find what they're looking for. Poorly organized search results and unintuitive information architecture can create usability problems, frustrate customers, and, most importantly, result in lost sales. The search and navigation functionality helps your costumers browse through the pages of your web stores. This can contribute to higher conversions, larger orders, more page views, and fewer complaints from people who use the search and navigation. The functionality capabilities are seamlessly integrated with the system. They are built on the Apache Solr server, which makes the framework easy to expand.

Using *search profiles*, either defined within SAP Commerce Cloud or connected to context-driven services or SAP Customer Data Cloud, you can personalize the search experience, showing customers the most relevant results in the most relevant order. These profiles can start simple and then, over time, can become as specific and as rich as your view of your customers is.

■ **Rule engine**

The rule engine converts business objects to be used in rule conditions and actions. To enable businesses to manage rules easily, the rule engine provides a generic user interface (UI) called the rule builder. With this, the functionality provides the following advantages:

- A configurable system based on rules
- A system that is capable of separating data and logic
- A fast and scalable system that provides an efficient way of matching rules and data
- A centralized repository of executable and readable rules
- Integration with a UI to manage rules and display results

The rule engine is built to be extensible and generic. Across the SAP Commerce Cloud platform, you can use it for bundling rules, order management for SAP Commerce Cloud warehouse and sourcing rules, and order change management rules. The perfect sample implementation is the promotion engine, which allows businesses to create and manage promotions and runs on top of the rule engine.

■ Promotion engine

The promotion engine allows businesses to create and manage dynamic and individualized promotions. Businesses are able to offer promotions on the fly and control the results throughout the customer’s journey. The promotions engine provides the following benefits:

- Improved customer engagement and retention through highly targeted promotions
- Easy-to-use and intuitive business tools for faster creation and publishing of promotions, as shown in Figure 3.3 and Figure 3.4
- An omnichannel strategy for promotion management to boost sales and customer loyalty across all touch points

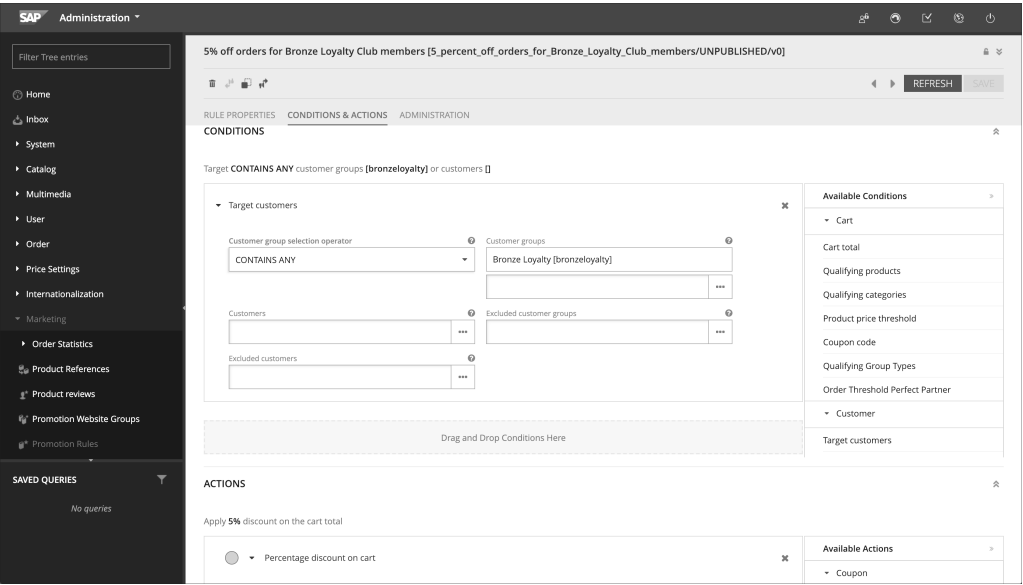


Figure 3.3 Defining Rules with Conditions and Actions for Promotions (Promotion Manager View)

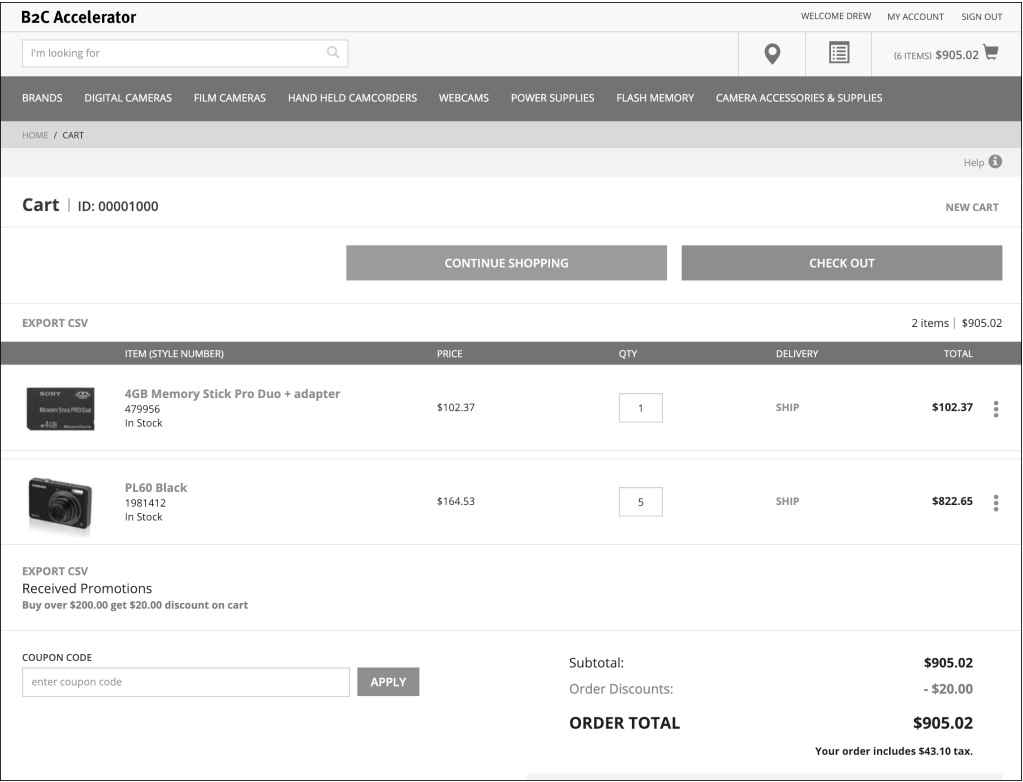


Figure 3.4 Use of a Promotion Code on a Storefront (Customer View)

■ Payment

The payment functionality (see Figure 3.5) answers the customer’s expectations for a flexible and modular solution that supports the complexity of online payment processing. Its main purpose is to help the large number of merchants that are integrating with payment service providers (PSPs) to map their commerce applications to the existing payment networks. This is necessary to reduce dependency on financial institutions and eliminate the need to establish individual connections directly. The payment functionality is ready to coordinate the flow of transactions among a complex network of financial institutions and processors. The functionality supports integrating payment gateways into SAP Commerce Cloud by grouping the adapters supporting the cooperation with external PSPs.

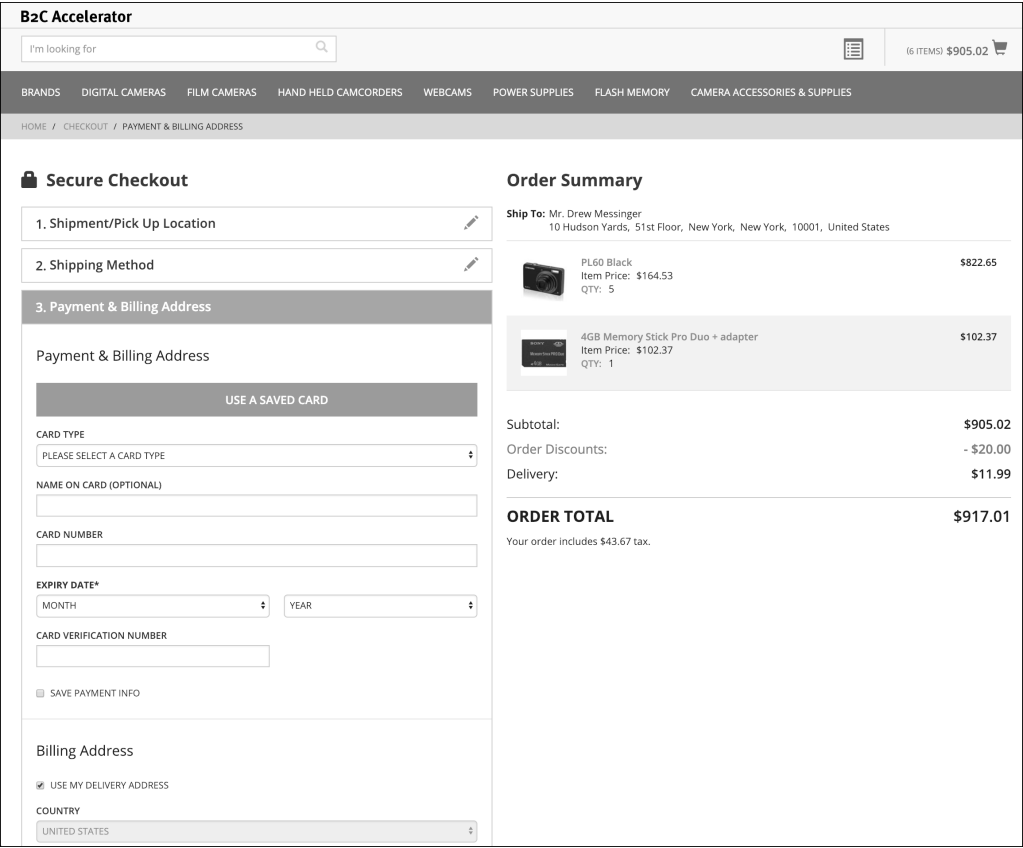


Figure 3.5 Example of an Integrated SAP Commerce Cloud Payment Functionality

■ Bundling

The bundling functionality (see Figure 3.6) provides the following functionality to personas who are acting in different areas of digital product marketing:

- Managing the combined sale of physical and digital goods to appropriately route and fulfill the physical and digital pieces separately
- Creating complex product offerings and personalized bundles that deliver multiple packages of digital goods, such as a sports media package in the case of an Internet Protocol television (IPTV) provider, or a magazine package for a publisher

- Enabling businesses that sell digital goods to continually sell to their customers via commerce application programming interfaces (APIs), for example, in-app purchases, guided selling, and up-selling

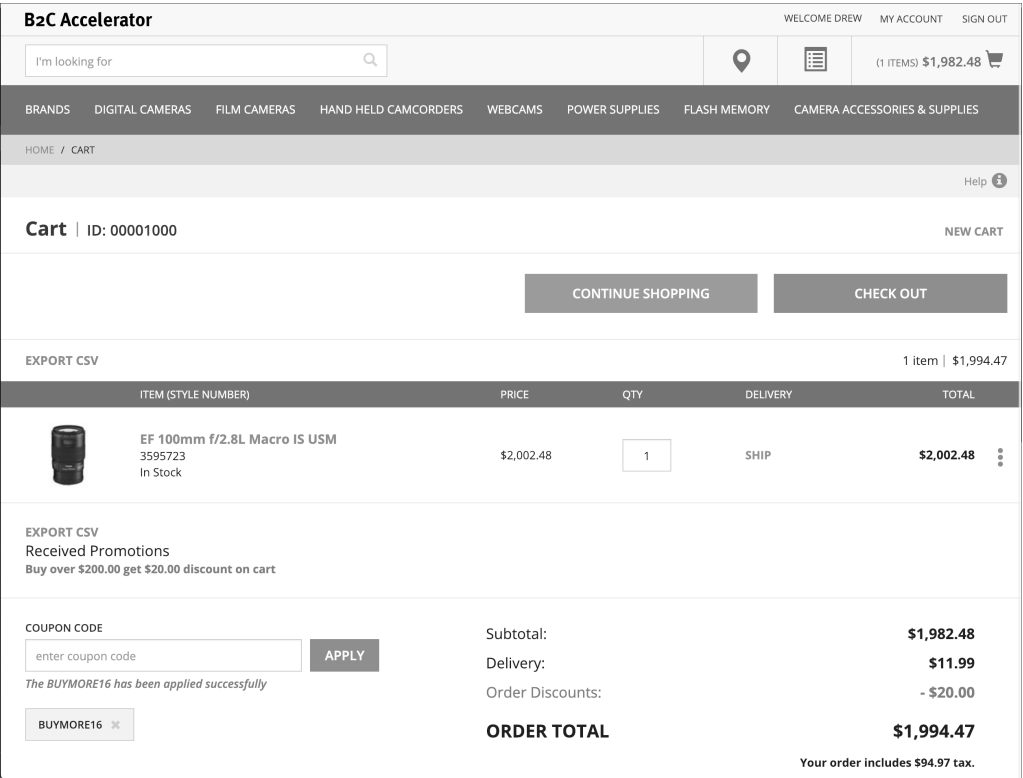


Figure 3.6 Setting Up Product Bundles in the Bundling Functionality

The bundling feature lets you define different pricing for a product depending on whether it's sold individually or in a bundle of multiple quantities. Figure 3.7 shows phone and plan product bundles available in a storefront for selection.

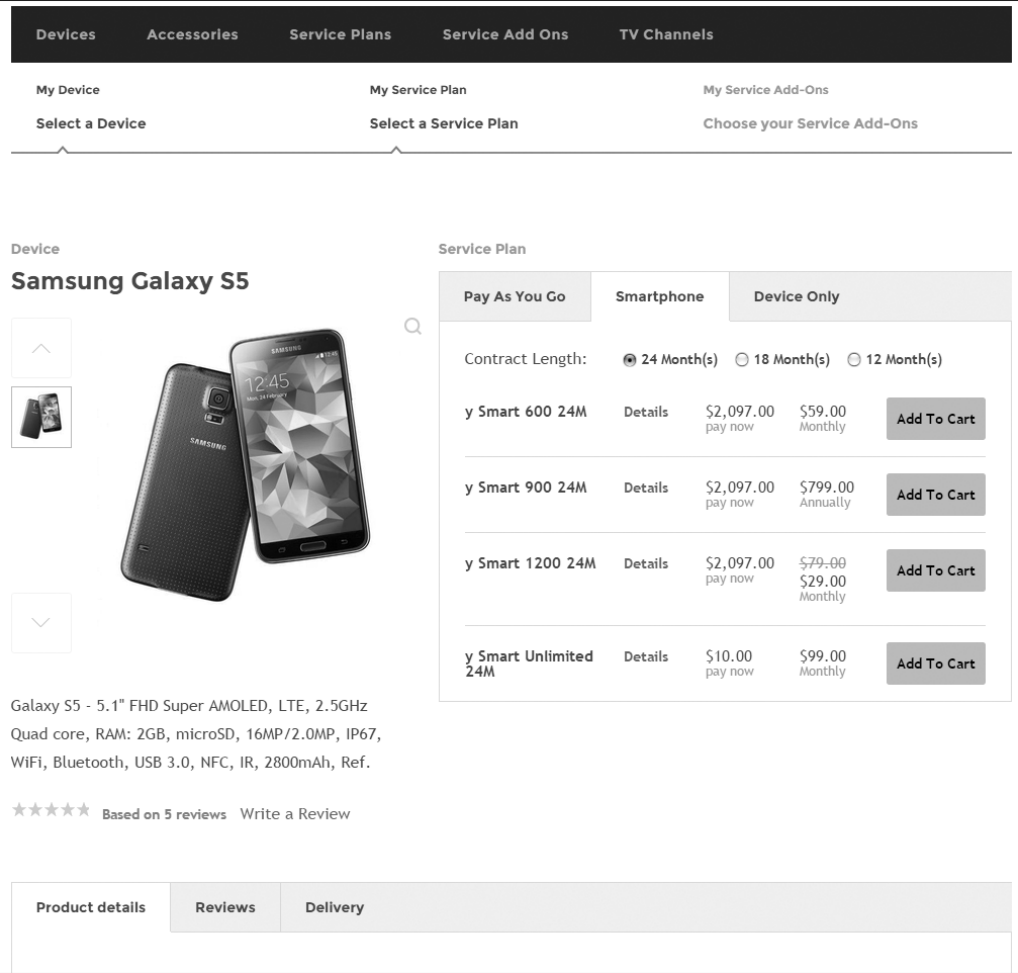


Figure 3.7 Product Bundles Available on a Storefront for Selection

■ Subscriptions

This functionality is specially designed to support businesses with a subscription-based sales model. SAP Commerce Cloud with the subscription functionality allows you to manage frequency, length, renewals, and other attributes unique to subscription-based business models. Using this tool, business users can easily set up subscription-based pricing, pricing periods, subscription terms and conditions,

entitlements and metering, and so on. By default, this functionality is deployed in SAP Commerce Cloud, telco and utilities accelerator discussed later in this chapter.

■ Assisted service module (ASM)

ASM allows customer sales and service personnel to provide real-time sales and service support to customers using the same storefront the customers are interacting with across the omnichannel framework. Whether the customer is buying online or in store, B2C/B2B sales reps or customer service agents can share the same buying experience and can even check out on behalf of the customer. B2B users can also use ASM to negotiate quotes. Additional relevant customer information, such as buying preferences, alternative product recommendations, or up-sell/cross-sell propositions, helps those sales and service agents drive customer satisfaction and conversion.

Figure 3.8 and Figure 3.9 show examples of ASM in the SAP Commerce Cloud, B2C accelerator storefront.

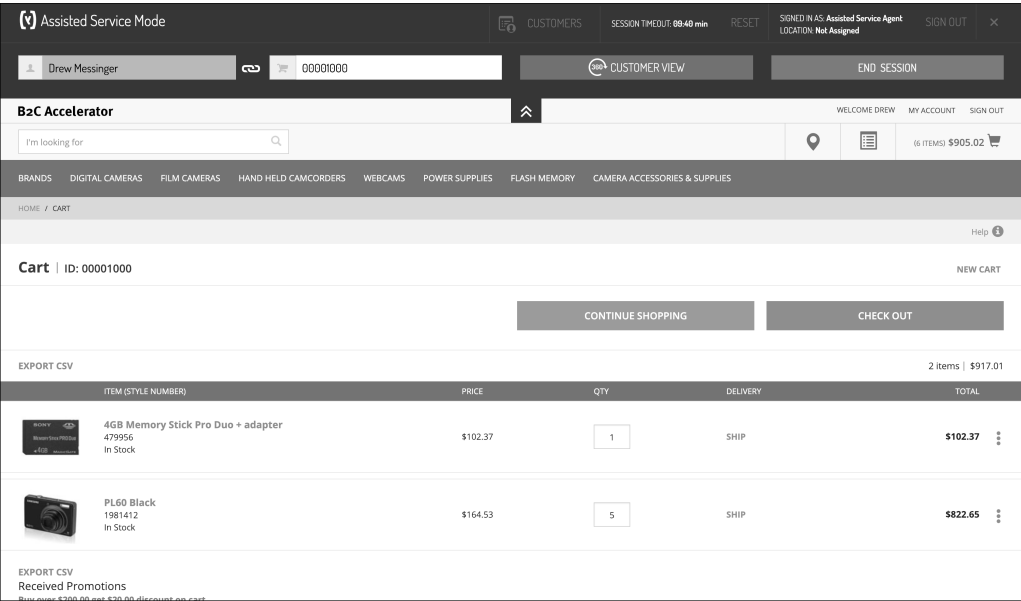


Figure 3.8 Assisted Service Module in a B2C Storefront

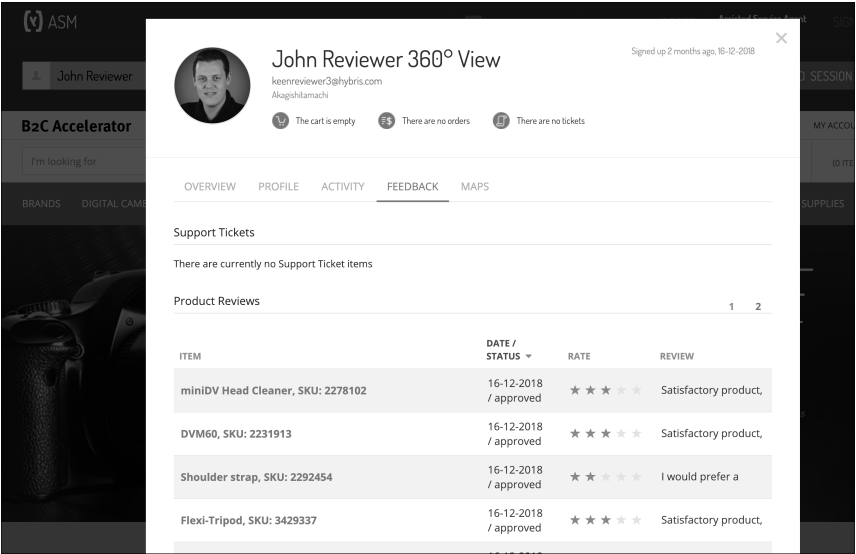


Figure 3.9 ASM 360 Degree Customer View

■ **Commerce infrastructure services (CIS)**

The SAP Commerce Cloud CIS deployment consists of a number of web applications for accessing third-party services, such as shipping, tax calculation, payment, fraud detection, address verification, and so on. Ready-to-use services based on SAP Commerce Cloud infrastructure services are available for certain third-party providers through the SAP marketplace.

■ **Omni-Commerce Connect (OCC)**

OCC is a commerce API offering a broad set of commerce and data services that enable you to use and leverage the complete SAP Commerce Cloud functionality anywhere in your existing application landscape. Its main benefits are as follows:

- Customers can enable new touch points and channels quickly without lengthy and costly IT cycles.
- Commerce processes and data can be reused easily across all touch points, increasing the speed and lowering the costs of providing new transactional interfaces.
- The functionality isn't restricted to human UIs; you can easily integrate with other systems and even provide interfaces to partners and other organizations.

Figure 3.10 describes a variety of components that can be connected to SAP Commerce Cloud via OCC.

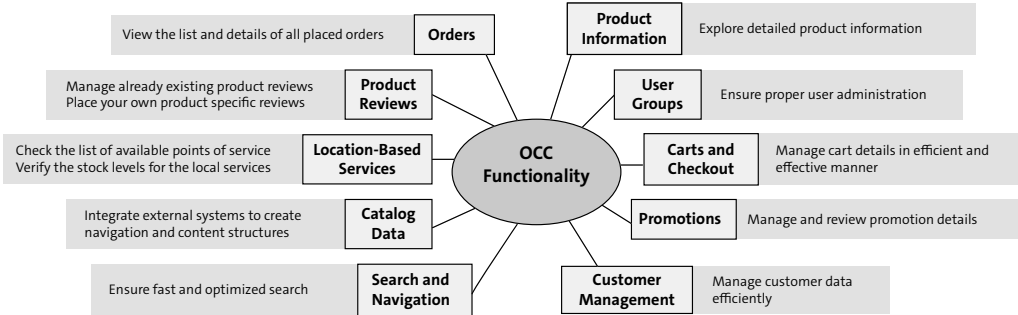


Figure 3.10 SAP Commerce Cloud Functionality to API Clients via OCC

3.4 Industry Accelerators

In addition to SAP Commerce Cloud, B2B and B2C accelerators, SAP has a growing list of industry accelerators. SAP Commerce Cloud industry accelerators allow you to deploy a fully integrated and truly omnichannel commerce solution for specific industries, such as telecommunication companies (telcos), financial services, and travel. These accelerators enable the unique shopping experiences customers demand and expect from merchants. These accelerators deliver fully integrated and working storefronts out of the box with a set of required business tools incorporating industry-recognized best practices and innovations. Hence, you have everything ready to go live faster because you only need to change the layout to reflect your branding and perform essential integration activities with your order fulfillment system and PSPs.

New industry-specific accelerators are being added to the SAP Commerce Cloud portfolio on a regular basis. In the following subsections, we'll look at some of the currently available accelerators.

3.4.1 Telecommunications and Utilities

Most commerce solutions are only centered on retail. However, below the surface of “a transactional website” a telco’s business requirements differ hugely from a retailer’s (e.g., subscriptions, add-ons, bundles, different promotions, unique checkout flows, upgrades, contracts, combining service and sales, etc.). Only SAP delivers a commerce platform specially designed to help telcos sell more online and in store, maximize average revenue per user (ARPU), and deliver an omnichannel customer

experience that streamlines complex purchasing processes. Using SAP Commerce Cloud, telco and utilities accelerator, businesses can go to market in as little as 50 days with a fully featured omnichannel commerce solution, including telco storefront templates, PCM, business tools, touch point integrations, bundling capabilities, order management, subscription capabilities, and guided selling.

As its name implies, SAP Commerce Cloud, telco and utilities accelerator also covers media subscription packages, such as cable plans, or other uses cases in which recurring charges are necessary and/or services are sold instead of or in addition to physical goods. Services can be combined with goods (physical or digital) in a single order using *cart of carts* functionality, which allows for shipped goods, one-time services charges, and recurring services charges to be settled in a single order and through a single checkout process.

Figure 3.11 shows the standard storefront delivered with the B2C SAP Commerce Cloud, telco and utilities accelerator.

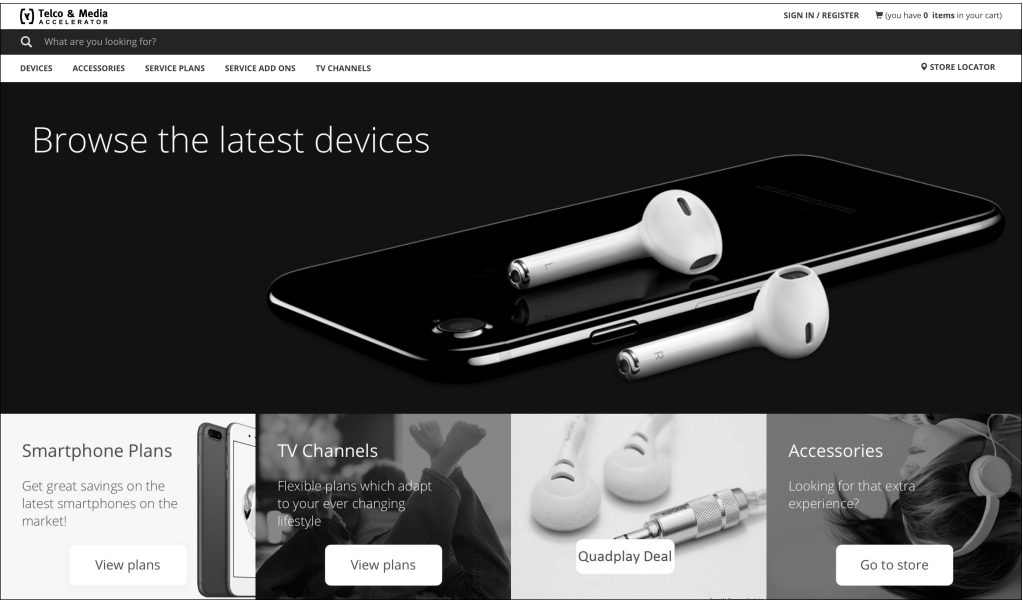


Figure 3.11 An SAP Cloud Commerce, Telco and Utilities Accelerator B2C Storefront Template

Some of the key features of SAP Commerce Cloud, telco and utilities accelerator are as follows:

- Provides a complete storefront for products and services with management of digital and physical goods packages
- Enables complete management of selling devices and contents, and changing devices
- Allows bundling of products and services, including rule-based discounts, bundles, and promotions
- Supports initial subscription data to customer invoicing with possible different scenarios, such as upgrading a customer account and using a prepaid system
- Fully integrates with multiple channels
- Enables automatic cross-selling and up-selling of compatible accessories

3.4.2 Financial Services

SAP Commerce Cloud, financial services accelerator includes preconfigured reference integrations and storefront templates for property, travel, and event insurance policies. It can also be easily customized and extended to meet the needs of other financial service providers, such as banks and retail financial institutions. Customers are guided through each step of the quote process, with various policies and added options, and they can enter all relevant data through customized forms that adapt to their answers. You can easily set up insurance bundles consisting of plans, associated options, and payment methods in the Product Cockpit. You can also provide customers with a summary of their choices and the option to request a quote, issue a policy on the spot, or save for later review, as shown in Figure 3.12.

SAP Commerce Cloud, financial services accelerator also includes an ASM solution that enables agents to take over a customer’s online frontend and quotes, offer product support on the spot, or simply complete an order on a customer’s behalf. Some of the key components included with this accelerator are financial services storefront templates; PCM; business tools; touch point integrations; dynamic online forms; support for homeowner, renter, auto, life, and event insurances; bundling capabilities; ASM; and subscription capabilities. Consumers can easily request insurance quotes by entering their details in the **financial services** accelerator storefront screen, as shown in Figure 3.13.

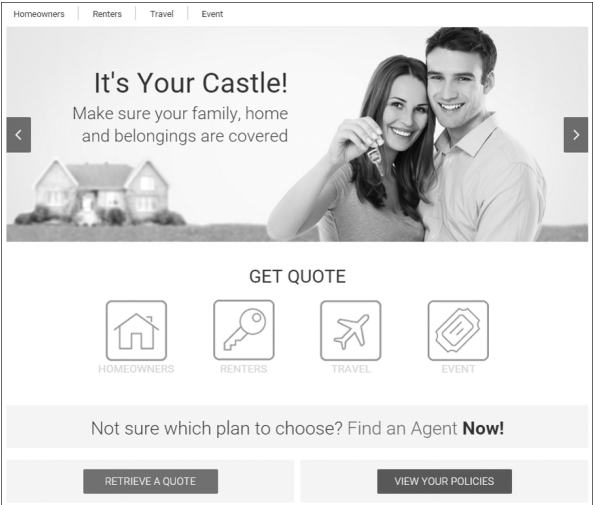


Figure 3.12 SAP Commerce Cloud, Financial Services Accelerator Storefront for Insurance

Figure 3.13 Customer Requesting an Insurance Quote in the SAP Commerce Cloud, Financial Services Accelerator Storefront

Some of the key features of SAP Commerce Cloud, financial services accelerator are as follows:

- Tailor-made omnichannel solutions for financial service providers
- Customer portals for improved selling and integrated forms for customers to fill in all relevant data via yForms
- Ability to retrieve, save, and review quotes in the checkout process
- Homeowner's, renter's, travel, and event insurance storefronts
- Customizable prices and additional policy options
- Guided selling options included to guide customers through the ordering process, including the ability to compare different insurance plans
- Support of dynamic forms for complex insurance policy types
- Easy configuration of bundling options for insurance plans with associated options
- Ability to offer flexible customer payment options, for example, monthly, quarterly, or yearly
- Integration with ASM to offer product support in completing the transactions for complex policies by taking over customers' storefront experience
- Support for the find agent functionality, enabling customers to find experts quickly in a financial-related field of interest and communicate directly with agents of their choice

3.4.3 Travel

The SAP Commerce Cloud, travel accelerator enables travel companies to deliver their omnichannel strategies through SAP Commerce Cloud, providing market-leading retail capabilities to meet modern travel business demands.

The core of SAP Commerce Cloud, travel accelerator is the data model, which is designed specifically to provide a reference model that can be extended and adapted to meet the needs of customer implementations. Based on the OpenTravel Alliance (OTA) industry standard, it encompasses the main data objects for transport providers: air, rail, bus, cruise, and ferry.

SAP Commerce Cloud, travel accelerator provides a preconfigured storefront based on an airline B2C model, containing pages and components that deliver a responsive UI design as well as a complete booking funnel for flights and related products. It

provides a suite of business services that can be exposed through any channel to deliver a complete end-to-end customer experience.

The underlying integration capability of the SAP Commerce Cloud platform enables customers to develop connectors to a range of industry reservation and inventory systems.

The main features of SAP Commerce Cloud, travel accelerator are as follows:

- Fully responsive storefront featuring a landing page, travel search, fare selection, ancillaries, passenger details, payment, booking management, flight status, trip finder, and customer login/registration
- Fare selection page with search results and a dynamically updating itinerary basket
- Ancillary selection page with the ability to add supplementary products (flight meal options, seat selector, lounge access, fare upgrades, etc.) to the itinerary
- Ability for customers to log in or create an account with a passenger profile complete with preferences
- Ability for customers to manage their bookings, check flight status, search for past or upcoming bookings, and update their profile
- Integrated ASM so customer service agents can offer product support and help complete transactions for customers directly from their basket
- Back-office cockpits with business administration interfaces for creating and managing products, flight schedules, bundles, promotions, and business rules

3.4.4 Citizen Engagement

SAP Commerce Cloud, citizen engagement accelerator helps bring services to citizens through a single, unified UI that resides in users’ personal accounts. It provides ease of use in document handling, requests, payments, permits, and registrations in areas such as the following:

- Civic services to deliver public services online, such as applying for an ID, visa, or parking permit, as well as filing public grievances
- Social services to support financial or medical assistance, childcare assistance, and unemployment benefits
- Tax and revenue management, including online taxpayer services or using omni-channel capabilities across all devices and channels; allowing agencies, citizens,

and governments to exchange information; and minimizing the need for “double-touch” interactions

- Grantor requests to allow, for example, schools to easily request and track grants for modernization projects, such as new building insulation

3.5 Product Content Management

Businesses today sell across multiple brands, channels, and business models. More often, product content and business information are scattered across the organizations and systems. It becomes increasingly difficult to assimilate information from various sources to offer consistent branding and execute effective marketing campaigns. Traditional product information management (PIM) solutions are limited by their capability to only manage structured product content, such as product number, name, price, and so on.

On the other hand, by consolidating the management of product content and business data on a single platform, product content management (PCM) enables organizations to ensure consistency and increase efficiency across channels, systems, and lines of business (LOBs). It has been designed to enable customers to bring all customer-facing content, structured and unstructured, into a common repository—creating a golden record for product-related content—to allow business users to easily edit and maintain the contents. PCM is a strategic component to enable omni-channel customer experiences not only for touch points managed with SAP Commerce Cloud but also for any kind of marketing-related communication to customers, such as email, mobile apps, search engines, and third-party marketplaces. PCM complements classic master data management solutions, which generally focus on managing product master data to ensure backend process execution, and it defines data for customer experiences. PCM is normally owned by the LOB to develop relevant product content and to sell brands and relationships to power cross-selling and up-selling. The key features of PCM are as follows:

- **Creating a single source for product content**
PCM absorbs data from disparate sources (e.g., users, internal and external data sources, offline channels, online channels), ensures that consistent product information is available across all the channels and touch points, and then presents a uniform view to users, devices, and channels. The flexibility and agility of PCM

makes it suitable for B2C, but B2B companies also can use PCM to develop a consistent product content repository. For example, you can see how PCM supports the management of base products and their product variants in Figure 3.14.

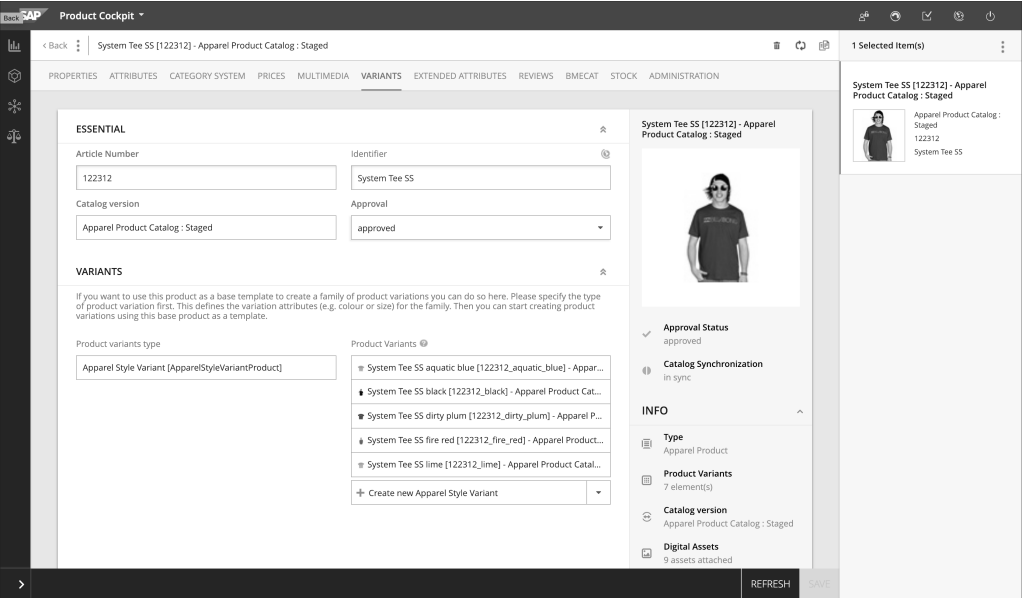


Figure 3.14 Managing Product Variants in PCM

■ UI for product managers and marketers

The SAP Commerce Cloud Product Cockpit is the central business tool to create and manage all product content in PCM. The highly configurable graphical UI makes product data management more efficient, process oriented, and user friendly. The Product Cockpit can be configured to display role-based sets of UI elements and provide guided procedures to ensure that all relevant information is maintained. It supports mass data management capabilities, simplified workflows, and synchronization. As a preconfigured solution, Figure 3.15 shows that you can easily browse catalogs, navigate product content, and edit product attributes as needed. It’s an ideal product data management solution to deliver excellent usability and cost savings.

The newest version of the Product Cockpit, deployed through the backoffice framework, also offers a Solr-based search index for employees to search for and filter products in a similar fashion to end customers on the frontend. This

enhanced *backoffice Product Cockpit perspective* also offers enhanced workflow management, advanced bulk editing, and easily configurable Excel import and export.

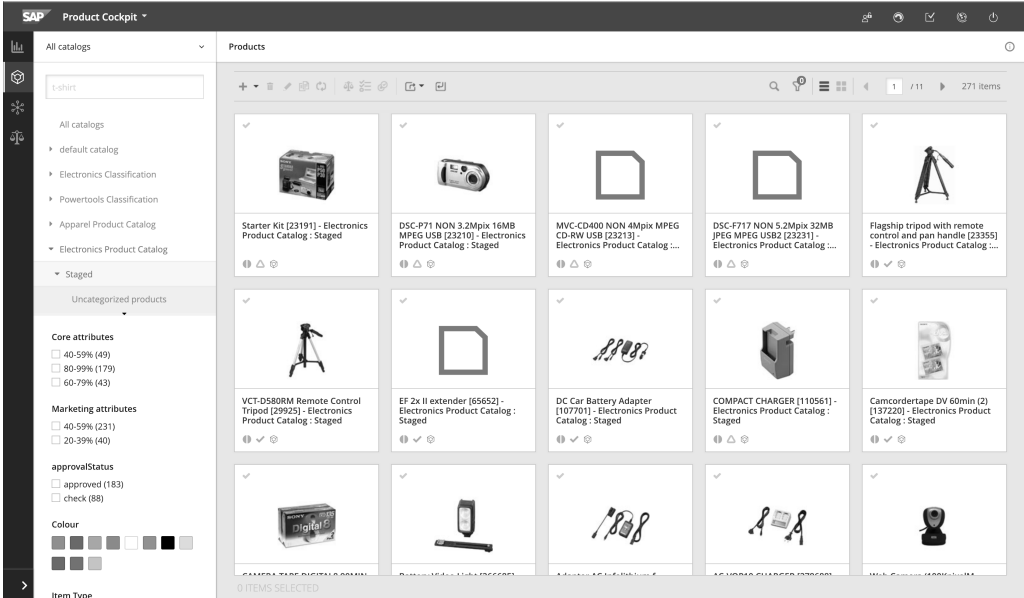


Figure 3.15 Product Cockpit in SAP Commerce Cloud

■ Effectively managing multiple catalogs

To ensure proper display of products, organizations must be able to manage product information as a hierarchically structured catalog. PCM enables organizations to define a catalog structure, create a master taxonomy, classify and categorize products, manage catalog versions, and import multiple supplier catalogs.

■ Product data syndication

Apart from aggregating master data from your own data sources, such as SAP ERP, SAP Digital Asset Management by OpenText, or other databases, PCM allows you also to connect with suppliers who can easily upload, map, and import their product data. This helps you standardize the upload process of your suppliers, while the validation engine ensures that the data is delivered in high quality. As it’s also important to distribute product data to third-party channels, such as marketplaces or partners, PCM allows you to map, sync, and optimize your product data to the different target channels.

■ **International support**

PCM is built for global businesses with international support, including multiple languages, currencies, and brands; and region-specific payment services, address forms, fulfillment processes, and tax calculations. It allows you to configure and synchronize multiple catalogs in multiple languages and local touch points.

■ **Ready to leverage SAP Master Data Governance (SAP MDG)**

PCM provides out-of-the-box integration with SAP MDG, which is the key solution for master data management. SAP MDG supports companies in consolidating master data from any SAP and non-SAP system and creating a single record, centrally creating and maintaining master data across heterogeneous systems in the enterprise, and providing a verifiable audit trail of when, why, and by whom master data was changed.

SAP MDG and PCM complement each other to support end-to-end product data management and provide governance, control, and data quality, enabling consistent product experiences through the customer lifecycle.

3.6 Order Management

The order management functionality in SAP Commerce Cloud is the bridge between the frontend and backend. Customers view order management and commerce as one. The order management functionality bridges the gap between commerce and downstream systems to enable consistent order capture, accurate price and availability information, reliable insight into order status with visibility across channels, optimal order allocation between various fulfillment systems and harmonious orchestration across front-office and back-office processes, and the ability to hide the complexity from customers. Omnichannel orders coming in from anywhere using a single view of inventory can be fulfilled from anywhere internally or externally using multiple backend systems. SAP Commerce Cloud provides cross-industry order management for resellers and other e-commerce providers as a centralized hub to integrate all the order processes from different channels, as shown in Figure 3.16.

The order management system provides tools to handle all order-related activities, such as creating new sales orders, changing or canceling orders, creating returns and refunds, and checking availability of products on the fly. You can also update delivery and shipping information, check the order status, and see the total cost of ordered goods, including shipment cost and taxes, based on the delivery address and delivery

method. The system supports multiple methods of payment that are extensible and customizable.

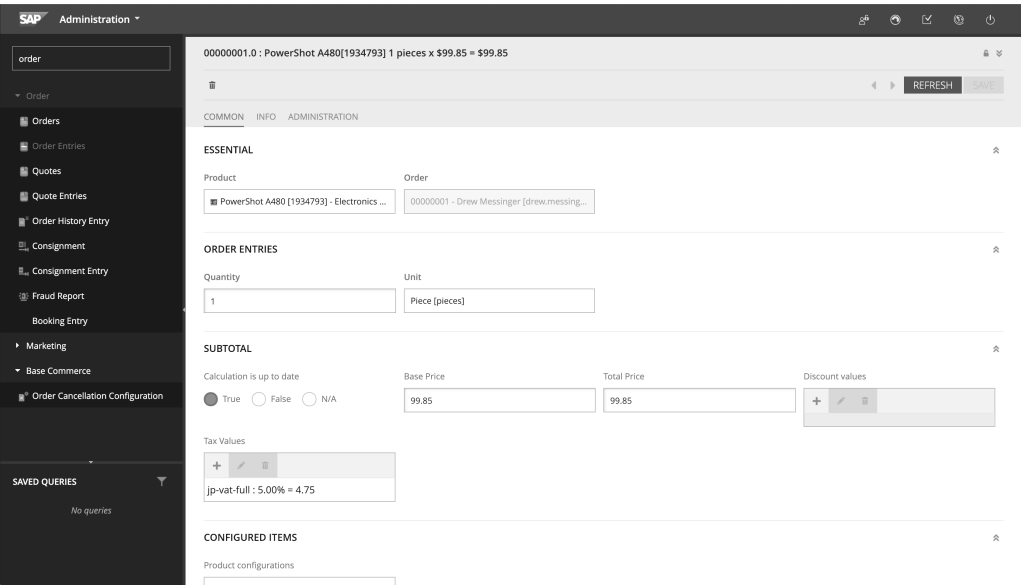


Figure 3.16 SAP Commerce Cloud Order Management Administration

The benefits of using order management are reflected in the ability to offer consistent customer experiences across channels. Customers can research products in one channel, buy in yet another channel, and check the order status in another channel. For example, customers can research products on a web storefront, place the order by calling a service agent in a customer contact center, and then finally check the status of their order in a mobile app. The centralized processing and controlling of all the orders in an organization provides an aggregate view of all the orders placed by customers irrespective of channel.

The key components of the order management functionality are as follows:

■ **Order process workflow**

The order process workflow, also known as order controller, manages and controls customer orders as they pass through various stages. When an order is placed, the controller understands the current status of the order and what stage it has to go to next. The order updates can be leveraged by third-party system integration to react to status changes, such as if the order is canceled, put on block for delivery, and so on.

■ **Order versioning**

During the different stages of order processing, the order status can change many times for various reasons, such as items not available in stock, items on back order, order partially or fully shipped, payment declined, or potential fraud detected. The order server records such changes to orders and prepares a log of the order version history. The order status changes are logged for orders as well as each consignment of an order. This order versioning provides greater visibility of order status to both customers and service agents.

■ **Distributed order management (DOM)**

Customer orders may include items from multiple sources, and individual items may need to ship to different addresses or may require different shipping methods. In such scenarios, orders are split into multiple consignments. Such consignments need to be shipped to separate addresses. Orders may also get split if all items aren't available for immediate shipment (e.g., a back order or partial shipment). DOM also splits orders to allow a vendor to fulfill orders from different physical locations. The optimized sourcing can meet specific business requirements, such as fewest shipments, closest location, or overstocked locations. Order management supports order splitting and routing to different back-office systems based on business rules. It also supports back-order and presales campaign scenarios.

■ **Order cancellation**

Order management allows cancellation of orders before cutoff times or cancellation of parts of an order prior to dispatch. The cancellation changes can be applied automatically on such orders based on business rules. Sellers can define such rules for the customer to get a complete or partial refund for the order cancellation.

■ **Hub for warehouses**

Because order management works as a centralized hub for processing, routing, and controlling orders, warehousing can integrate with the order management functionality, fetch orders or parts of orders, and then report back stock levels and availability of items to the system. Warehouses can also provide additional information on order shipments, such as carrier details and tracking details if items have been shipped. Order management also provides interfaces to query stock levels, availability, expected to be in stock, tracking details, and so on to display information on the website or when required. Email notifications can be sent when an item becomes available in stock, and items may be marked as presales items or as always being in stock.

■ **Hub for fraud service providers**

The order management functionality can be used to detect fraud attempts on orders via fraud checks, followed by additional and more sophisticated fraud detection using a third-party integrated solution. If a fraudulent order is detected, the order is placed on hold and placed in the fraud queue for customer service agents to review. It prevents an order from being processed further unless service agents have reviewed the order and removed the fraud block. The interface with order management allows you to query why an order has been flagged for fraud so that you can determine the fraud judgment criteria.

■ **Stock information**

With the stock service in order management, you can display product inventory stock levels as a net of reservations and sales, and so on. By leveraging the integrated available-to-promise (ATP) functionality, you can also display delivery lead times for various delivery conditions and manage stock information. You can also configure important thresholds, such as allowed overselling, always in stock, or always out of stock quantities, and easily integrate with existing warehouse management systems to control these quantities in source systems. Order management delivers out-of-the-box functionality for strategies to deal with product availability-based order splitting and stock level check during order creation.

■ **Returns and refunds**

Order management allows you to create customer returns from the back office or to enable a self-service return request for end customers. This offers end customers the flexibility to initiate return and refund requests from the web storefront and check the status of their requests online using the self-service functionality. They can also call a customer service agent to initiate the process directly in the back-office system.

■ **Store fulfillment**

Order management offers pick, pack, and ship; buy online pickup in store (BOPIS); and buy online return in store (BORIS) capabilities. End customers have comprehensive and streamlined shopping experiences across the channels (online, mobile app, or in store).

3.7 Customer Experience Management with SmartEdit

The traditional approaches to engaging customers with mass-segmentation and boilerplate-driven content aren't sufficient to attract and retain digital customers.

The expectation is increasing for improved customer experience with each passing moment. Organizations need to fine-tune their customer experience constantly to win and retain online customers. Customers are constantly looking for new contextual experiences based on personalized contents.

SAP Commerce Cloud enables businesses to provide contextual experiences to their customers. It delivers dynamic, consistent, and targeted content, as well as personalized offers, to online customers across the touch points. Customer experience management in SAP Commerce Cloud is fully integrated with SAP Digital Asset Management by OpenText to provide a 360-degree perspective of customers and present relevant content dynamically based on customer context.

Customer experience management in SAP Commerce Cloud is based on a three-pronged methodology:

- **Understand customers**
Before offering any engaging experience, it's absolutely critical that you understand your customers and their journey, uncover their needs, and record their transactions, events, interactions, contexts, and behaviors.
- **Create experiences**
Based on customer profiles, you craft customer experiences by personalizing content, merchandising, and commerce behavior. Using customer preferences, interactions, predictive analytics, and business rules, you create exceptional and contextual omnichannel customer experiences and deliver relevant and timely offers that are effective in shaping the customer journey from discovery to advocacy.
- **Deliver and optimize**
Deliver the customer experience, measure results, and fine-tune as needed to improve the business results. You need to measure performance based on certain key performance indicators (KPIs), such as conversion rate, customer lifetime value, cost per acquisition, shopping cart abandonment rate, bounce rate, and so on.

Businesses can execute on this methodology to create value and attract, convert, and retain customers. Through optimized websites, streamlined marketing, and branded experiences, businesses can attract new customers to their storefronts. Attracting customers to storefronts is just one side of the equation unless you convert them to actual buyers. Without conversion, it's as good as not having those customers at all. Converting visiting customers to buyers requires offering personalized search and merchandising for relevant products with tailored contents and promotions, and, finally, retaining the customers to create stronger brand loyalty through optimized

customer experiences and cross-channel consistency. The contextual customer experience is possible through SmartEdit, the SAP Commerce Cloud web content management system (WCMS). SmartEdit is a marketing and publishing tool that offers web content management capabilities for all channels and devices, as shown in Figure 3.17.

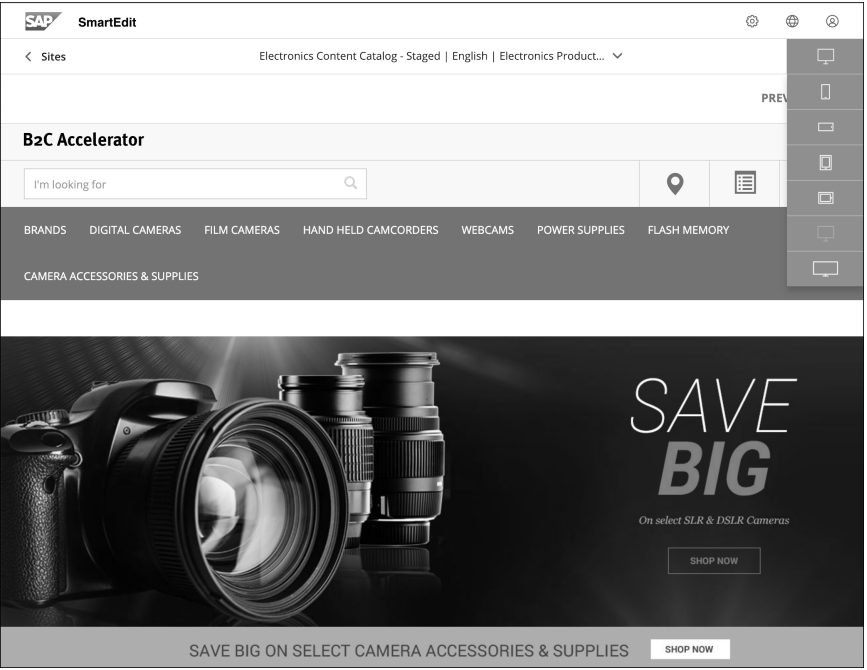


Figure 3.17 Consistent Content across All Devices via SmartEdit

SmartEdit is integrated fully with PCM in SAP Commerce Cloud and enables you to easily manage contents across channels, including online, mobile, and rich Internet applications, from a single interface.

You can effectively create, manage, and drive customer experiences across all touch points. SmartEdit supports comprehensive preview capabilities for both desktop and mobile devices with the ability to make changes to product contents by directly editing components; dragging and dropping to add and move components; synchronizing single components, whole sections, and entire pages; using responsive image management; and making changes on the fly. These functionalities enable businesses to easily place and reuse cross-channel marketing campaigns, as shown in Figure 3.18.

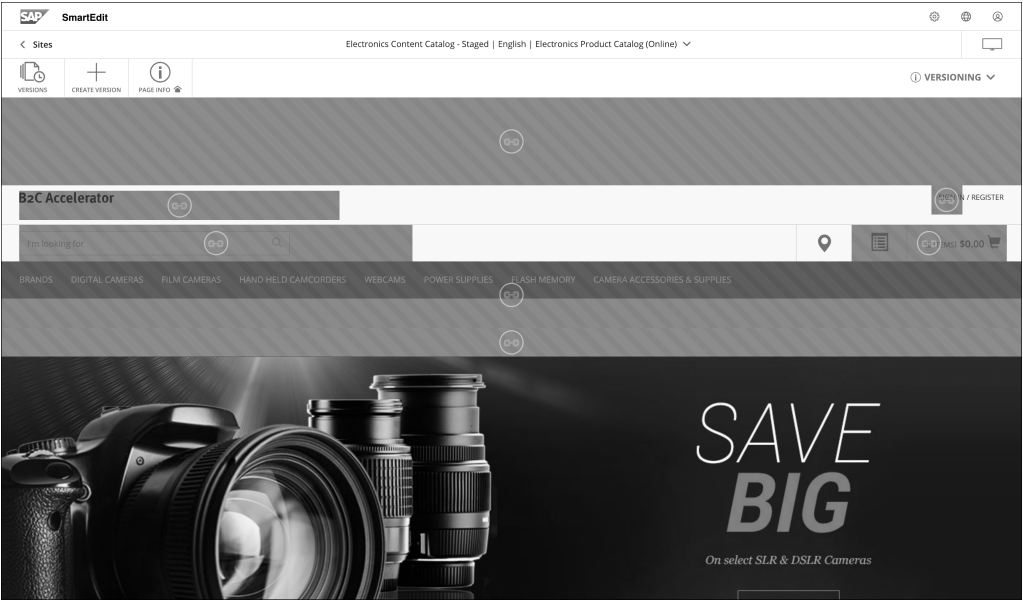


Figure 3.18 Drag and Drop Editing in SmartEdit

With SmartEdit, you can make content easily available across all output channels, enable fast and easy creation of first-class multifunctional sites, manage responsive sites from a single business UI, and ultimately create a seamless omnichannel customer experience. Some of the key compelling features of SmartEdit are as follows:

■ **Page-level editing**

You can design intuitive content management and navigation using world-class SmartEdit capabilities. It allows you to manage websites with versions and edit content contextually with options to preview and synchronize with catalogs. You can expedite content management through consumer-grade interactions by editing directly on the website using drag and drop, as shown in Figure 3.19. Open web services allow the reuse of content and integrations. Customer experience management with SmartEdit enables exceptional and contextual customer experiences from a single business tool.

SAP Commerce Cloud helps you provide consistent, dynamic, and contextual content across all touch points and devices with responsive templates and powerful capabilities, including SmartEdit, test, and preview. Most importantly, it has lower implementation times and requires no extra integration costs. SmartEdit provides

a framework for managing merchandising, personalization, optimization, and other commerce-related functionality in one tool, as shown in Figure 3.20.

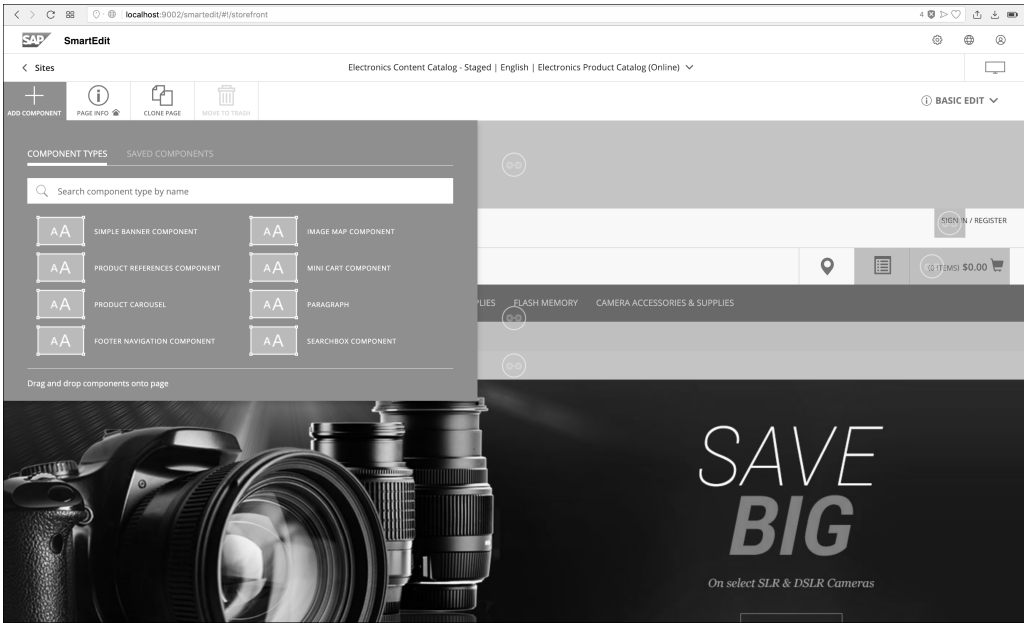


Figure 3.19 SmartEdit Capability in SAP Commerce Cloud WCMS

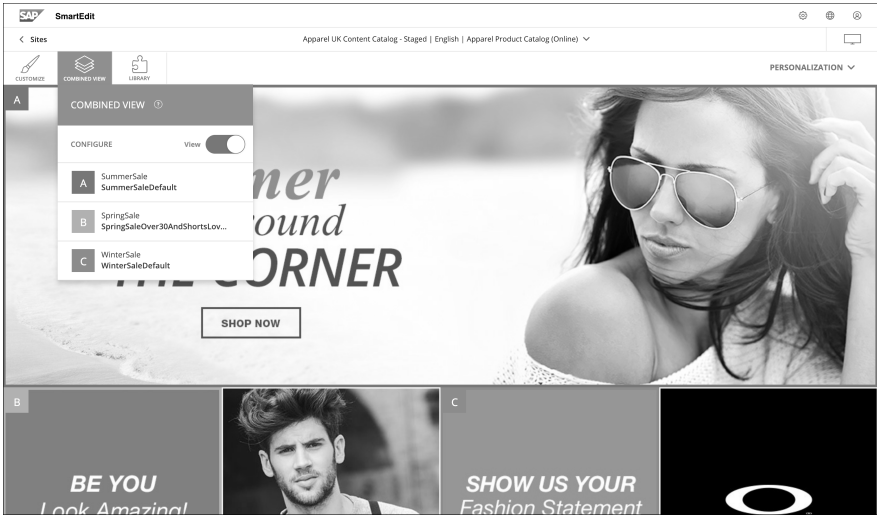


Figure 3.20 Personalization with SmartEdit

Figure 3.21 and Figure 3.22 shows how SAP Hybris Merchandising (at the time of writing, this product name has not yet been renamed following the SAP C/4HANA rebranding) in context-driven services allows business users to easily drag and drop the products to change the merchandising mix.

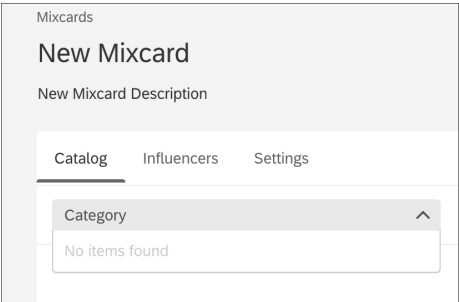


Figure 3.21 Example of a Merchandise Mix in Context-Driven Services

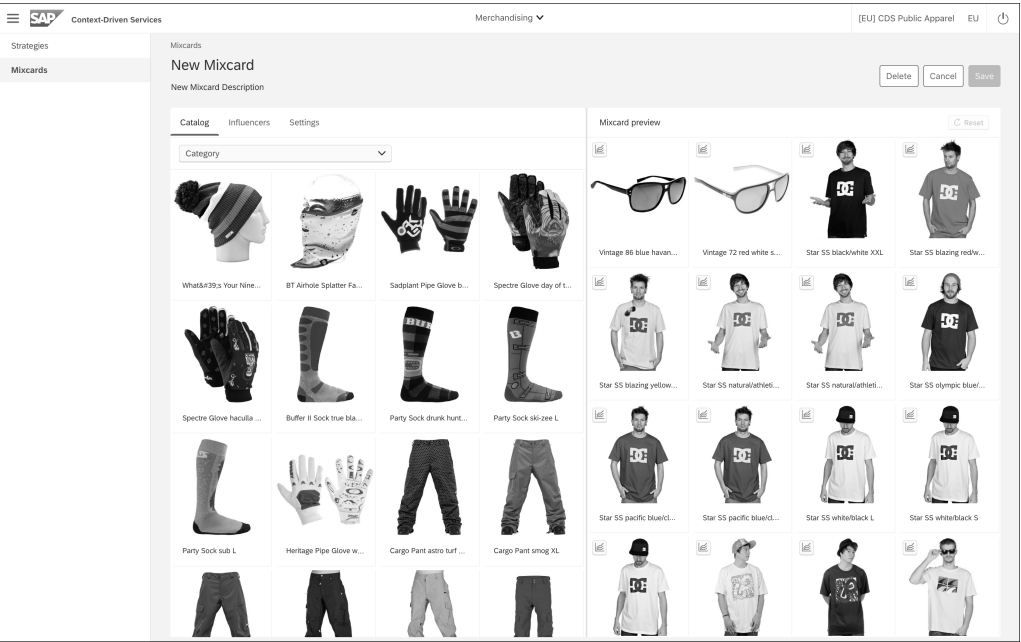


Figure 3.22 Dragging and Dropping Products to Change the Merchandise Mix

You can also personalize the experience for each storefront visitor automatically by proposing one-on-one merchandising recommendations.

To implement contextual merchandising effectively, you can leverage data continuously updated from the storefront in real time to track metrics such as best sellers, top converters, top trending, or most profitable products. Merchandisers can preview product mixes suggested by the system based on metrics for different contexts and adjust the priority of metrics to meet business and merchandising goals. Product mixes can be adjusted in real-time to show an up-to-date and contextually relevant product mix to the customer. Figure 3.23 shows how merchandisers can adjust the merchandising mix using business metrics, manually dragging and dropping products to components slots, and adding personalization rules to component slots for targeted product results as needed.

Merchandising in SAP Commerce Cloud context-driven services enables higher customer satisfaction with personalized buying experiences and offers business users the unique ability to quickly respond to trends to move products in the storefront more efficiently. It provides businesses better control over the dynamic commerce experience.

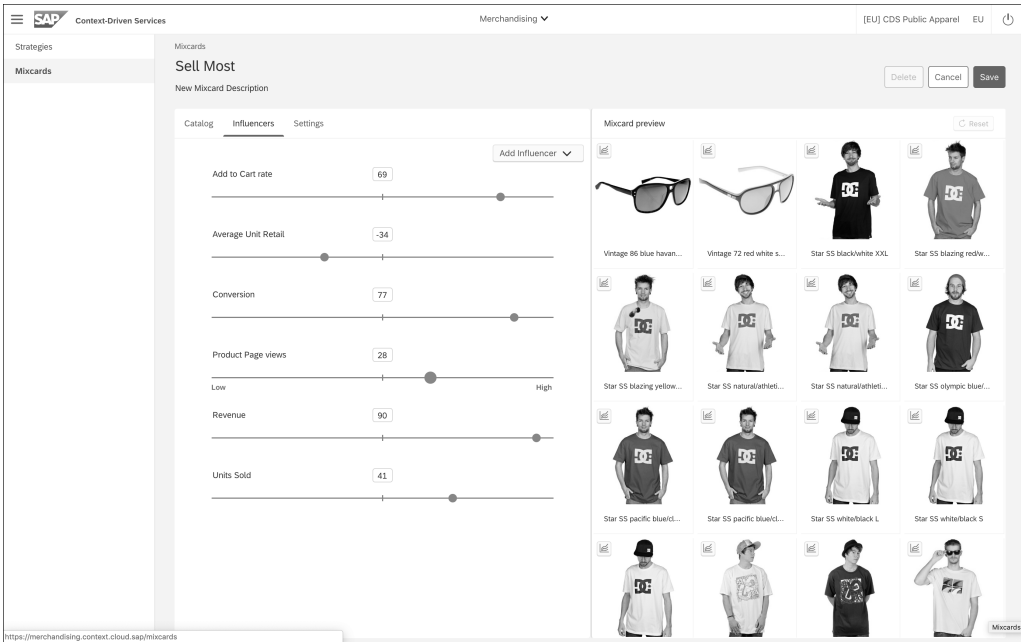


Figure 3.23 Adjusting the Merchandise Mix Using Business Metrics

■ Adaptive search

The adaptive search and navigation functionality under SAP Commerce Cloud integrates both faceted navigation and free-text search in a single interface. With type-ahead keyword suggestions and clues, users can fine-tune their searches. With spell check enabled, products appear in the search results even if keywords are misspelled by the customer. Faceted browsing enables you to display your offerings based on specific combinations of attributes that are important to customers. Customers can combine attributes dynamically to quickly browse huge product categories and easily find relevant product details, as shown in Figure 3.24.

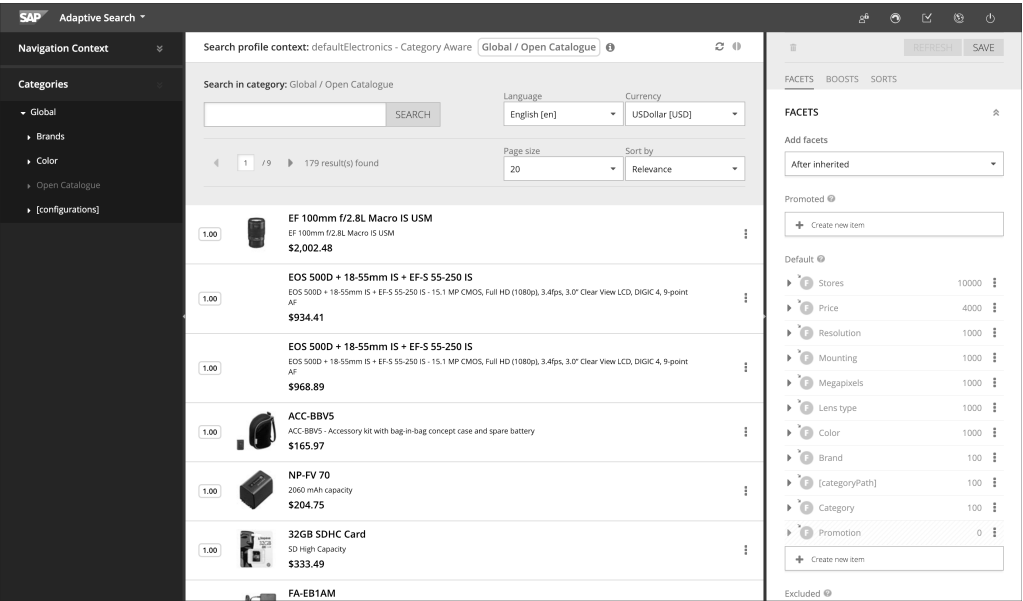


Figure 3.24 Adaptive Search Based on Attributes

The functionality also enables you to proactively manage the search experience with synonyms and stop words to adapt searches to reflect the real world. Shoppers can find what they are looking for with a wide range of related words. SAP Commerce Cloud also supports “searchandising” with keyword redirects, which allows you to define specific keywords that redirect shoppers to a specific landing page when they search for that term. This helps you manage content for certain products to maximize conversions, as well as up-sell and cross-sell opportunities, through carefully merchandised landing pages.

You can easily promote specific products, vendors, and product categories by placing them at the top of the search results, as shown in Figure 3.25.

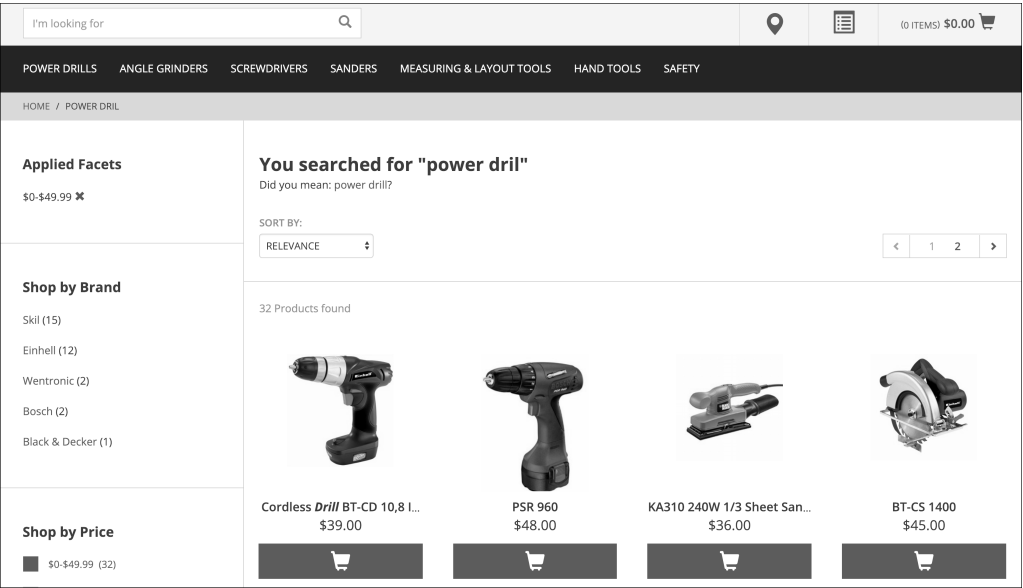


Figure 3.25 Product Search Results

The adaptive search perspective in the back-office empowers even nontechnical business users to manage and maintain search and facet preferences with its user-friendly interface. In adaptive search, you can promote “hero products” to the very top of search results by just clicking the star symbol next to the product. Facets can be turned on and off, and the order of facets can be changed as well. The boost and bury functionality allows you to prioritize certain products or product categories in search results based on business needs, pushing them higher or lower on the list.

The adaptive search functionality offers direct access to Apache Solr queries, including advanced Solr features such as field collapsing, geospatial search, simplified updating of search results with automatic updates through real-time synchronization of catalog changes, and custom mapping of Solr search results. Faceted browsing in the adaptive search functionality offers a range of sorting and browsing options to allow you to narrow and broaden the criteria by price, brand, product type, product color, product size, and so on. It includes support for multi-language, multicatalog, and multistore search capabilities—as well as profile-

specific search results, based either on customer personas established in SAP Commerce Cloud or via integration with SAP Customer Data Cloud and/or context-driven services, the latter of which we'll discuss in just a moment.

■ **Personalization in SmartEdit**

SmartEdit-based personalization capabilities work across both content and commerce in an integrated way so that you can build customer experiences consistently across channels and functionality. Using SmartEdit in SAP Commerce Cloud, you can see the end-customer experience as you build it, all while working in one set of tools.

The new personalization functionality comes with the following benefits:

- Easy targeting of content with the help of SmartEdit
- Creating customizations and managing how they interact for a complete user experience
- Observing changes in the correct context as you work using a dedicated preview
- Delivering a personalized experience to customers through the accelerator storefronts

The personalization mode available in SmartEdit helps you easily organize and customize the content displayed to particular users based on their allocation to user segments.

The personalization mode allows you to do the following:

- Manage targeted content from within SmartEdit.
- Create new customizations and manage how they layer and interact to build a complete user experience.
- See changes in the correct context as you work.
- Preview the customizations from the context of different customers.

You can create your customizations using the SmartEdit UI. After the particular customization is ready, you can preview it to see how the customization works for a particular target group.

If you're ready to take your personalization and segmentation to the next level, then you can do so using context-driven services. In combination with SmartEdit (see Figure 3.26), this cloud-based solution allows you to do the following:

- Create *mixcards* of recommended products, specific to a customer profile. These mixcards respond intelligently to *influencers*, such as add to cart rates, conversion rates, revenue generated, and units sold for a given product.
- Group multiple *mixcards* into *strategies* associated with specific customer profiles, and surface these in the SAP Commerce Cloud storefront via SmartEdit.
- Create *campaigns* associated with customer behavior, such as cart abandonment, and follow up via email to recover these customers.
- Generate reports on the effectiveness of your customer recovery campaigns.

Customization

BASIC INFORMATION

TARGET GROUP

Name *

Custom Campaign

Details

Enter a description for this customization

Status configuration

Configure date for activation

Date settings only apply if the customization is enabled. If the customization is disabled the date configuration will have no effect.

CANCEL

NEXT

Figure 3.26 Personalization in SmartEdit Integrated with Context-Driven Services

3.8 Upscale Commerce and Extensions

SAP Upscale Commerce is a software-as-a-service (SaaS) commerce solution directed at mid-market brands, generally those with a software implementation budget of less than \$250,000. It allows you to provide seamless, omnichannel experiences on the mobile-first web, including the following:

■ **Web and mobile app support**

Rich mobile experiences include gestural interfaces (swiping, tapping, pinch-zooming, etc.) and *one-tap buy* connected to your core commerce logic.

■ **DOM**

BOPIS functionality is provided without the need for a full storefront experience, giving customers a delightful experience regardless of the channel.

■ **Endless aisle**

Customers are shown the full range of products they can buy without traditional distinctions, such as which products are in stock, which are finished goods or configurable builds of materials, which are digital, and which are physical.

Additionally, the SAP Cloud Platform Extension Factory allows you to access commerce functionality via microservices, as we'll discuss in more detail in Chapter 7. Here are some examples of already-existing SAP Cloud Platform Extension Factory microservices:

■ **Product content**

Used for managing products, variants, and related media.

■ **Customer accounts**

Used to let customers sign in via email and social media.

■ **Cart/Checkout**

Used for customers to place an order with items in a cart.

■ **Order management**

Used for collecting orders from the cart and checkout microservice.

■ **Site management**

Used for administering sites, sales tax, and shipping.

3.9 Data Integration

The data integration capabilities of SAP Commerce Cloud allow you to easily and efficiently import, export, and synchronize data between SAP Commerce Cloud and other systems. You can leverage the following tools to handle any data exchange activity with SAP Commerce Cloud:

■ **SAP Cloud Platform Integration**

SAP Cloud Platform Integration is a powerful data staging and data integration platform to enable the loading of large amounts of data from many sources. The

data can be processed based on various rules and then prepared to be delivered to any number of target systems.

■ **ImpEx**

ImpEx is a text-based import and export functionality available with SAP Commerce Cloud. The ImpEx engine allows you to create, update, remove, and export platform data items such as customers, products, or sales orders from comma-separated value (CSV) data files, both during runtime and during the initialization or update process.

■ **Excel import/export in the backoffice Product Cockpit perspective**

To provide complete and accurate information about products to online customers, you need to aggregate information from various sources. Importing data from multiple sources into a central application is a complex, time-consuming, and error-prone process. As discussed earlier in this chapter, the Excel import/export features in the backoffice Product Cockpit perspective allow you to efficiently import data from a variety of spreadsheet formats and to export product data to spreadsheets using a simple, intuitive interface. You can then feed these spreadsheets to other systems, or alter, augment, and eventually report the data into SAP Commerce Cloud.

■ **SAP Commerce Cloud to SAP Commerce Cloud synchronization**

Known informally as y2ysync, SAP Commerce Cloud to SAP Commerce Cloud synchronization allows you to synchronize data from one SAP Commerce Cloud instance to another. The synchronization of data between the source and target systems of two installations, for example, is carried out using the SAP Commerce Cloud, data hub.

3.10 Configure, Price, and Quote

SAP CPQ for product configuration provides a comprehensive solution to manage personalized and configurable products in SAP Commerce Cloud. The SAP CPQ solution allows you to model the configurable products in the back office so that end customers are able to configure products in the online storefront, as shown in Figure 3.27.

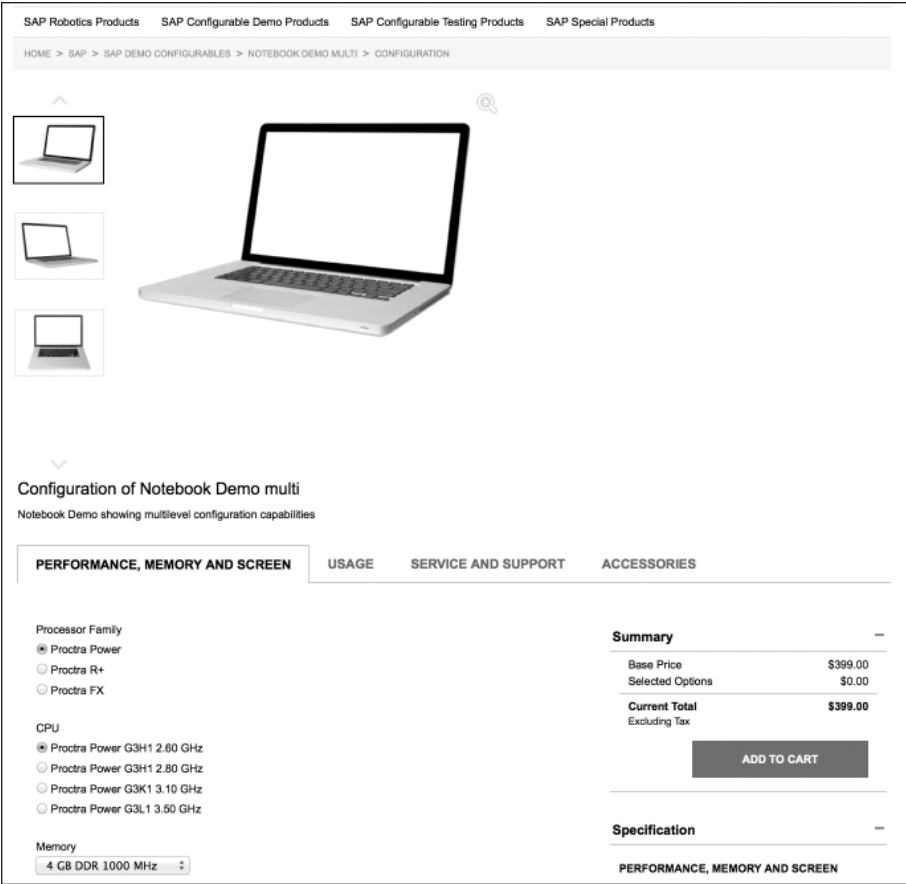


Figure 3.27 Product Configuration in SAP CPQ

Because companies can expose the variant and product configuration capabilities to customers, they can sell configurable products in online stores where customers can choose various product options interactively and then place an order. SAP CPQ supports both single-level and multilevel product configuration, as well as 3D visualization for products in storefronts (see Figure 3.28).

When you set up the configurable products to be sold through the online store, you can do so through modeling, replication, and enrichment. The modeling exercise is carried out in your ERP system, such as SAP S/4HANA. After modeling, you create the knowledge base and import it into SAP Commerce Cloud along with the product master using the data loader. Finally, you enrich the product data using PCM.

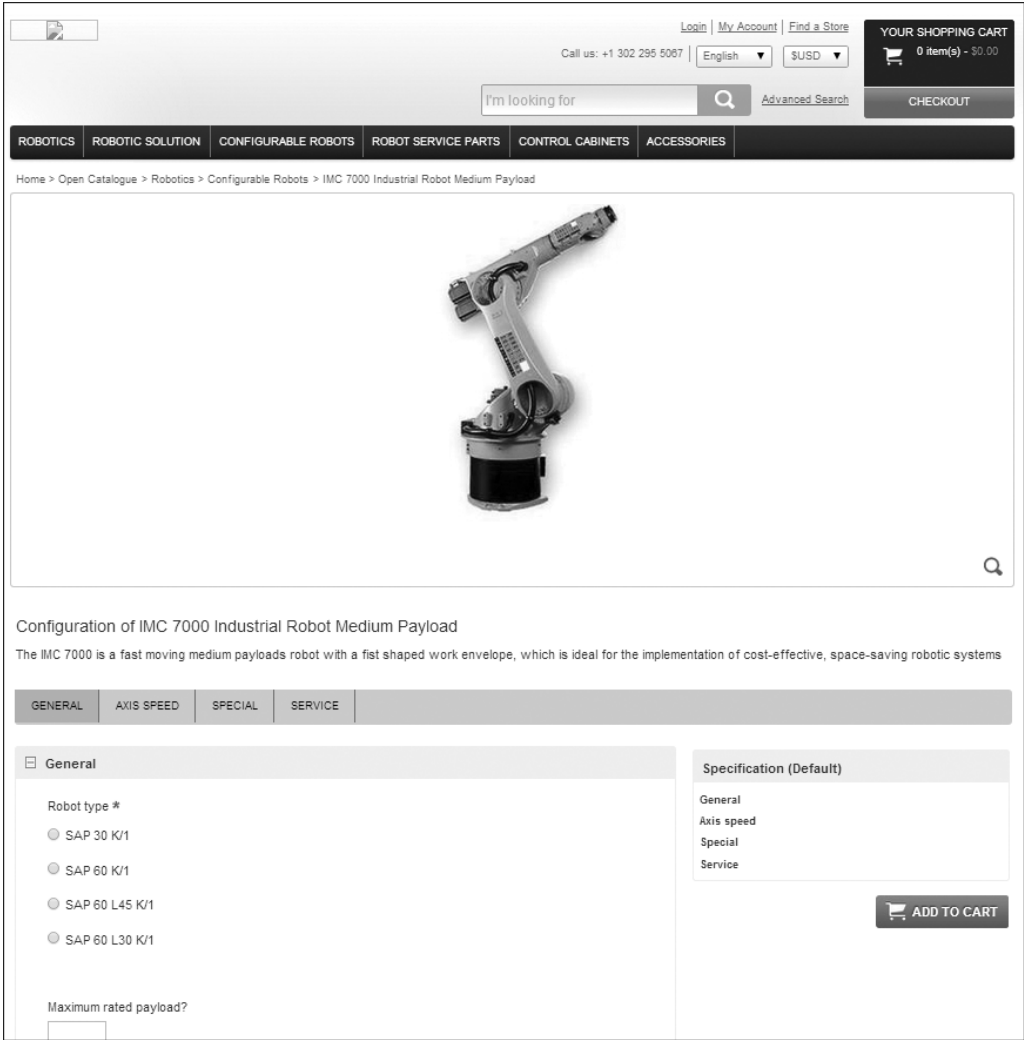


Figure 3.28 3D Visualization for a Configurable Item in a Storefront

The key features of SAP CPQ product configuration are as follows:

- **Online store support**
SAP Commerce Cloud provides guided selling for configurable products so that customers can interactively configure products while the system ensures that only valid options are displayed for selection (providing suggestions for conflict resolution) and only relevant information is requested by the customer. Product

configurations started but not completed by customers are retained even if customers navigate away from the configuration page. Customers can add configured products to the shopping cart even if the configuration is incomplete or has conflicting characteristic values. Using WCMS integration, business users can configure the configuration page in SAP Commerce Cloud.

■ **Local configuration runtime engine**

The product configuration is based on a fully featured runtime engine that runs locally in SAP Commerce Cloud. Hence, customers can easily configure products online without needing an active connection with the SAP backend system. The product configuration in SAP Commerce Cloud is in complete sync with product models in the SAP backend system. A fully compatible configuration runtime engine based on original master data from the SAP backend system ensures smooth integration with SAP's fulfillment capabilities.

■ **SAP integration**

SAP CPQ supports both synchronous and asynchronous order management scenarios. Hence, for both order management scenarios, configuration results are sent to the SAP backend system for further processing

3.11 Integration

SAP Commerce Cloud integrates both with other components of SAP C/4HANA front-office applications, such as SAP Service Cloud, SAP Marketing Cloud, and SAP Sales Cloud, as well as with SAP S/4HANA back-office processes. In this section, we'll cover the integration options for SAP Commerce Cloud.

3.11.1 SAP C/4HANA

SAP Commerce Cloud integrates with other SAP C/4HANA solutions to enable simplified front-office processes. We've already covered some of the SAP Commerce Cloud integration scenarios with SAP Marketing Cloud in Chapter 2. Let's review some of the key front-office integration scenarios with SAP Commerce Cloud in this section.

SAP Marketing Cloud

The integration between SAP Commerce Cloud and SAP Marketing Cloud enables you to identify and target customers with personalized offerings. You can maintain omnichannel profiles to create target groups and execute targeted campaigns to

extend personalized shopping experiences to all customers. The ability to track customers' interactions gives you the power to make intelligent product recommendations to your customers. Some of the advantages of using integration with SAP Commerce Cloud are as follows:

■ **Customer segmentation**

Marketers can segment customers based on different attributes using predictive analysis. They can create tactical customer segments in SAP Marketing Cloud segmentation and create a campaign for each segment. Customers can also be dropped into segments and corresponding campaigns as and when they are identified in the storefront.

■ **Design personalization**

Using the SAP Commerce Cloud WCMS design personalization, you can define web shop personalization per customer segment and then assign those segments to the corresponding campaigns in SAP Marketing Cloud for personalized and targeted campaigns.

■ **Personalized interaction**

You can offer personalized shopping experiences to SAP Commerce Cloud storefront customers through the assignment of a login user to the customer segment and the corresponding campaign.

■ **Track customer journey**

Using SAP Marketing Cloud data management, you can track the customer journey and shopping behavior. You can leverage the shopping behavior to track cross-channel customer journeys and score and nurture customers through effective segmentation and optimized campaign execution.

■ **Clickstream integration**

Using SAP Commerce Cloud and clickstream integration, you can capture and detect a customer's interest in specific products, product categories, special offers, and so on. Clickstream feeds can be aggregated to create interaction in SAP Marketing Cloud. You can also record important events in the customer shopping journey, such as add to shopping cart, add to wish list, shopping cart abandonment, and so on, and then create interactions in SAP Marketing Cloud.

■ **Real-time product recommendations**

You can build a recommendation model using predictive capabilities to offer real-time product recommendations to web shop customers for cross-selling and up-selling using SAP Marketing Cloud. You can propose products in the form of "you might be interested in the following products."

SAP Sales Cloud and SAP Service Cloud

SAP offers a ready-to-use integration framework between SAP Commerce Cloud and SAP Sales Cloud and SAP Service Cloud. These integrations enable organizations to go beyond customer relationship management (CRM) and combine SAP Sales Cloud and SAP Commerce Cloud. It allows sales agents to browse catalogs, configure products, and create orders directly from the SAP Cloud for Customer environment for true interactive selling. SAP Commerce Cloud and SAP Cloud for Customer provide a standard integration between the market-leading omnichannel commerce and customer support solutions in the SAP product portfolio. It keeps the customer data synchronized between SAP Commerce Cloud and SAP Service Cloud and SAP Sales Cloud, as well as service tickets between these two systems to connect customers with customer support agents. Customer service agents can resolve tickets through the SAP Commerce Cloud customer ticketing system or over the phone.

In addition, using single sign-on (SSO), customer service agents can open ASM on top of the commerce storefront to provide seamless interactive sales and service support to customers in real time. Sales agents can browse the commerce storefront, search the product catalog to look up product information, configure product bundles, add products to the cart, create quotes, or check carts out for customers on their behalf. If needed, they can also help customers with their account information such as payment details, existing orders, delivery details, and so on, enabling both sales and service teams to provide interactive selling and service to customers on the spot.

Integrated SAP Commerce Cloud and SAP Service Cloud/SAP Sales Cloud allows businesses to provide integrated customer service and sales support across customer touch points. It enables the sales force to provide interactive and engaging selling experiences with customers throughout the sales process. Customer service agents are also able to provide exceptional service in all the channels, leading to increased sales and a loyal customer base.

SAP Customer Data Cloud

SAP Customer Data Cloud, based on the technology stack previously known as Gigya, takes the consent, compliance, and security features outlined throughout this chapter and turns them into a true omnichannel approach. Mastering your customer data in SAP Customer Data Cloud will allow you to comply with GDPR across both commerce and noncommerce channels, as well as provide your customers with the same robust tools, granular controls, and deep trust that only true data transparency can

provide, in a rapid, reliable, scalable manner, maximizing the benefits of centralized data while minimizing the risks.

Direct integration between SAP Commerce Cloud and SAP Customer Data Cloud currently centers on two key feature sets:

- **Registration-as-a-service (RaaS)**
Allows for standalone omnichannel account creation and authentication.
- **Social login**
Ties customer accounts to their social media profiles in a secure manner, allowing customers to access their commerce accounts using their social media identities without exposing inappropriate information to those social media services directly.

3.11.2 SAP S/4HANA

SAP Commerce Cloud integration with SAP S/4HANA or SAP ERP provides a standardized, ready-to-use framework that connects SAP's omnichannel commerce capabilities with the SAP backend. SAP customers and partners don't need to build complex integrations from scratch to connect SAP Commerce Cloud with SAP backend solutions. SAP Commerce Cloud supports orchestrating orders to multiple backend systems. This out-of-the-box integration allows you to connect SAP Commerce Cloud with both SAP ERP and SAP S/4HANA simultaneously. SAP Commerce Cloud can act as the omnichannel order capture and orchestration engine. The SAP backend remains the system of record for order fulfillment (shipping and billing). SAP Commerce Cloud integration with the SAP backend system supports the following scenarios:

- **Master data**
You can replicate backend (SAP ERP and SAP CRM) master data—such as customers (B2B), customers per day (CpD) or one-time customers, addresses, products, classification, pricing data (condition records), stock levels or inventory, installed base, and business agreements (from SAP CRM only)—to SAP Commerce Cloud.
- **Asynchronous order management (loosely coupled integration)**
This type of integration between SAP Commerce Cloud and the SAP backend is developed for B2B and B2C scenarios. In these scenarios, communication between the SAP Commerce Cloud frontend and the SAP backend run in the background, and customer interaction happens only through and within SAP Commerce

Cloud. SAP Commerce Cloud remains independent of the SAP backend as far as data persistence and business processes are concerned. In this case, sales orders are created and saved in SAP Commerce Cloud first and then replicated to the SAP backend asynchronously. The order fulfillment processes (delivery and billing) are done in the SAP backend, and order statuses for delivery, goods issue, billing, and so on are exchanged with SAP Commerce Cloud.

■ **Synchronous order management (tightly coupled integration)**

This type of integration is preferred for B2B scenarios, and communication between SAP Commerce Cloud and the SAP backend is mainly synchronous. Although customer interactions are handled mostly through SAP Commerce Cloud, the data persistence and business processes reside in the SAP backend. In this case, calls to check out and view the order history are transferred directly to the SAP backend system, and they don't have any representation in the SAP Commerce Cloud system. It's possible to run both the synchronous as well as asynchronous scenarios at once. You can have one store integrated with asynchronous order management and another store in parallel with synchronous order management.

■ **Synchronous pricing**

You can use synchronous pricing between SAP Commerce Cloud and the SAP backend to enable the online store to read pricing information in real time from the SAP backend system. This functionality allows the latest prices to be shown, including complex pricing procedures, in store without any delays and can be used in different store areas, such as catalog, product details, and cart.

■ **Report to synchronize data**

A report is provided to synchronize the foundational data between SAP Commerce Cloud and SAP backend systems such as currency codes, units of measurement, countries, plants/branches (to transfer plant data), regional taxes, price elements, data on material numbers conversion (transfers output format settings for product IDs), material groups (includes product price classes and product discount classes), customer groups (includes customer price lists and customer discount groups), form of address keys, distribution channels, and divisions. In the report, you can specify the languages required to import into SAP Commerce Cloud.

■ **SAP invoices**

Customers (both B2B and B2C) can view their invoices online from their SAP Commerce Cloud storefront, although they were created in the SAP backend system.

3.11.3 SAP Customer Relationship Management

Similar to SAP ERP, SAP Commerce Cloud can be integrated with SAP CRM to leverage powerful backend functionalities with commerce frontend capabilities. SAP CRM integration supports the following scenarios:

■ **Master data**

On the same line as SAP ERP, you can replicate customers (B2B), consumers (B2C), products, pricing, and installed base data from the SAP CRM backend to SAP Commerce Cloud.

■ **Asynchronous order management**

Similar to SAP ERP, for B2B and B2C scenarios, sales orders can be saved and captured in SAP Commerce Cloud and replicated to SAP CRM for backend processing.

■ **Synchronous order management**

In this scenario, communication between SAP Commerce Cloud and SAP CRM is synchronous, and orders are created directly in SAP CRM.

■ **Synchronous pricing**

Using synchronized pricing, SAP Commerce Cloud directly reads pricing information from SAP CRM in real time. Hence, the storefront displays the most up-to-date pricing information for products.

■ **SAP invoices**

If you're using the SAP CRM billing functionality and integrating SAP Commerce Cloud and SAP CRM, you can allow B2B customers to view invoices originating from SAP CRM in online stores.

■ **Service request management**

Using this scenario, you can replicate service requests between SAP CRM and SAP Commerce Cloud.

■ **Complaint management**

Similar to service requests, you can replicate complaints between SAP CRM and SAP Commerce Cloud.

■ **Service contract management**

Using service contract integration, you can enable online customers to retrieve and display service contracts from SAP CRM in an online store. SAP CRM service contracts can also be renewed or terminated from the SAP Commerce Cloud storefront.

■ **Service order management**

You can replicate service orders created in SAP CRM to SAP Commerce Cloud to

display in an online storefront. The service order can be created as a follow up from a service quotation, service contract, or service request, or it can stand alone.

■ **SSO to ASM**

You can integrate ASM to streamline the service process between SAP CRM and SAP Commerce Cloud to resolve customer issues quickly.

■ **Product registration**

This integration scenario enables customers to register the products they have purchased in an online B2C storefront for service entitlement.

■ **Return orders**

In this scenario, return orders can be initiated from the SAP Commerce Cloud storefront and replicated to SAP CRM for further processing. Returns can be initiated for B2B and B2C asynchronous orders, and the status is updated between SAP Commerce Cloud and SAP CRM at each step of the return process.

3.11.4 Open APIs for SAP and Third-Party Integration

The SAP Cloud Platform Extension Factory Open APIs allow you to integrate SAP Commerce Cloud and SAP Commerce Cloud as a service-based commerce site (SAP Commerce Cloud as a service) to enhance the native SAP Commerce Cloud platform capabilities with cloud-based microservices built on SAP Commerce Cloud as a service. You can connect data between SAP Commerce Cloud and SAP Commerce Cloud as a service on an SAP Cloud Platform instance asynchronously through the SAP Commerce Cloud, data hub.

The SAP Cloud Platform Extension Factory Open APIs help to move data (e.g., products, prices, orders, stocks, etc.) between SAP Commerce Cloud and SAP Commerce Cloud as a service. For example, an order placed in an SAP Commerce Cloud as a service-based commerce site is transferred automatically to the SAP Commerce Cloud platform where subsequent order fulfillment will be carried out. At the same time, status updates are passed to the SAP Cloud Platform Extension Factory Open API-based storefront from SAP Commerce Cloud. SAP Cloud Platform Extension Factory Open APIs can be used to provide comprehensive commerce scenarios between SAP Commerce Cloud and SAP Commerce Cloud as a service.

While the integrations outlined in the previous section are some of the most common and most important for day-to-day operations, it's important to note that they are by no means the only integrations possible for SAP Commerce Cloud. We've discussed, for example, how the payment process in almost any commerce storefront

will require some integration with a payment gateway, and perhaps with a tax calculation service and/or a third-party fraud-checking service as well.

These checkout-based integrations are useful to us here because they are examples of integrations that need to work in real time. For example, in a B2C checkout process, we need to authorize payment with the payment gateway before accepting the order; we need to calculate tax against the customer's zip code before we can provide a calculated tax amount; and we need an answer from the fraud detection engine before we can send the order along to fulfillment.

SAP Commerce Cloud communicates with all of these systems in the same manner. Permit us to get a little technical for just a moment in order to explain how. For all these sorts of real-time interactions, SAP Commerce Cloud offers a robust set of APIs, based on the standard of Representational State Transfer (REST). You'll often hear the communications between these APIs and the APIs of third-party technologies referred to as RESTful web services.

SAP Commerce Cloud generates RESTful web services for all of its important business objects, such as products, prices, and customer accounts. In principle, then, any third-party application with its own well-maintained API can communicate with SAP Commerce Cloud in real time, invoking and altering the business objects exposed via REST.

RESTful web services are used not only for key real-time integrations within a commerce storefront but also for real-time communication with other channels. Native apps running in iOS or Android will communicate with the core of SAP Commerce Cloud via REST, as will web frontends built on some technology other than the SAP Commerce Cloud accelerator framework. If your business uses a wide variety of channels, then RESTful web services will allow SAP Commerce Cloud to communicate with them in a powerful, scalable manner.

3.12 Summary

In this chapter, you've learned how SAP Commerce Cloud provides rich modern commerce capabilities for attracting, converting, and retaining customers in the digital economy. Easy-to-use and extremely powerful tools and solutions (e.g., SAP Commerce Cloud accelerators, customer experience functionality with WCMS capabilities, PCM functionality, extensive order management features, and deep integration

capabilities) enable companies to offer comprehensive omnichannel commerce journeys.

In the next chapter, we'll discuss the SAP Sales Cloud, the first half of the current-generation replacement for SAP CRM. You'll learn how to empower your team throughout the sales pipeline and how to connect that process to the rest of the SAP C/4HANA suite before, during, and after a sale gets made.

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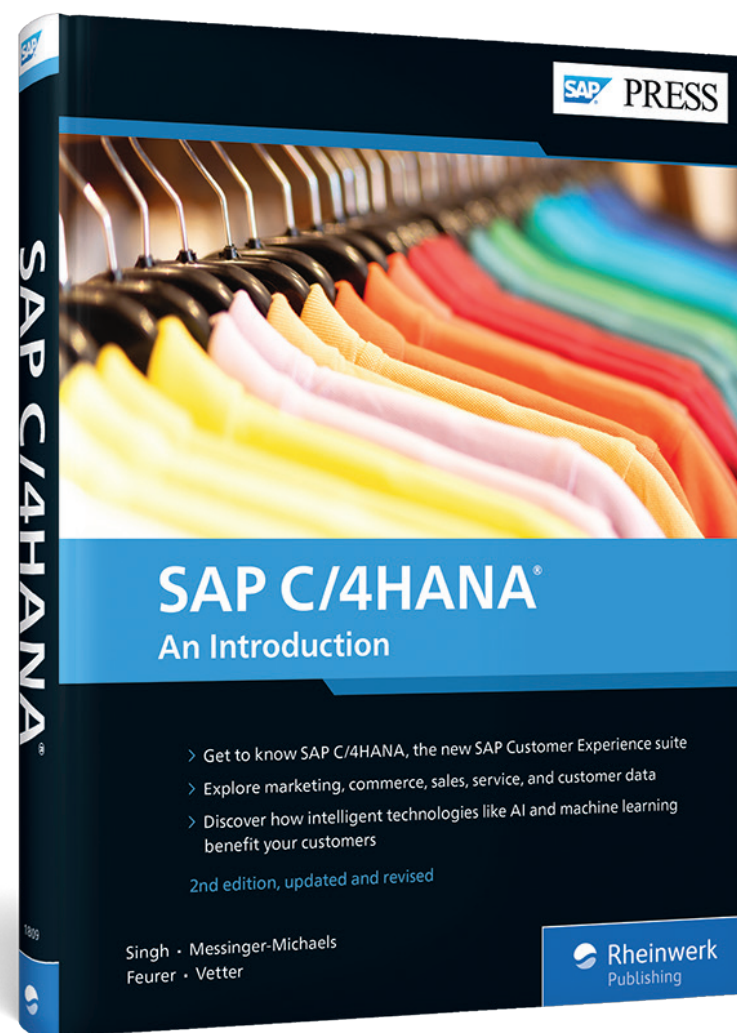
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