

Commerce Cloud and eCommerce Platform Optimizations



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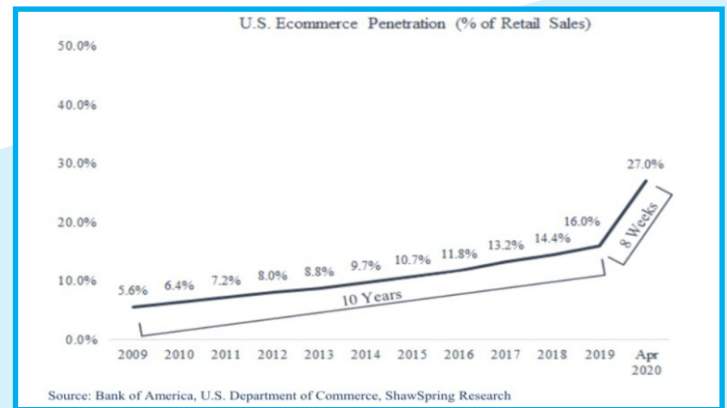
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Commerce Cloud and eCommerce Platform Optimizations

Introduction

Almost overnight, the already exciting world of eCommerce is more critical than ever. It's the 2nd Quarter of 2020 and the Coronavirus pandemic has skyrocketed online sales. People are “sheltering in place” and online shopping is more popular than ever. But everyone agrees that COVID-19 has transformed online retail into the #1 purchase method in the US.



Credits : Dennis Hong | Founder - ShawSpring Partners | <https://shawspring.com/>

Now we find that workloads, traffic demands, and the subtleties of your site, and site design, are details that have become more important than ever before. “Good-enough” simply isn't ... anymore. Your website needs to be in top shape to manage the new traffic and workloads of today and the future.

ETG has been building, managing, and custom-developing eCommerce technologies for ten years. This experience has provided up with insights that allow up to design and optimize eCommerce implementations for enterprise companies, so they STAY at the top of their industries.

We want to earn your business, and I invite you to take advantage of our consulting services. But before you do, I've written this Platform Optimization guide for Salesforce Commerce Cloud and other enterprise eCommerce solution users.

I hope you find it helpful.

Paul T. Montgomery



Start Here: Mobile – First design



“E-commerce optimization” typically conjures thoughts of search terms, keywords, and Call-to-Action (CTA) buttons. In this whitepaper, we'll dive deeper and address the more detail-oriented technology solutions that provide long-term benefits.

A Mobile-First approach is the logical and practical first step towards optimization. Make sure that your site is visually clean, user-friendly, and easy to navigate. Most users quickly leave websites that are visually “busy” or have an over-complicated UI. And once they bounce, you'll have a hard time ever getting them back.

54% of eCommerce sites suffer from over-categorization. Simplicity is growing in importance because more people are shopping on mobile devices. Intent-driven micro-moments are reshaping how we view the customer journey. Overly complicated or crowded menus are a hindrance, and they potentially drive away customers.

The New Paradigm: de-Coupling the User-Experience from the Core technology

To maximize eCommerce flexibility, the new Best-Practices standard has the UX-User Experience separated from the technical processes of the application. This is termed a "Headless" commerce architecture, where the “Head” is the User Experience (front-end) and the Backend includes everything else (the content, the database, – everything that isn't the interactive portion.)

Salesforce allows headless architecture, and it provides an advanced framework that jumpstarts your development with its own front-end toolkit the “Commerce Cloud Storefront Reference Architecture” (SFRA). SFRA features same technical concepts as headless, in that it's a de-coupled front end, but it adds an entire suite of additional functionalities that radically improve your development.

BOTH headless and SFRA can be implemented in parallel on Commerce Cloud. We'll delve into this later. Regardless of platform, it's vital that retailer's transition to the Headless concept.

2020 is the year that mobile online sales overtook desktop sales.

Mobile is the #1 shopping method and IoT shopping is growing at an unprecedented pace. Headless and SFRA are the most important optimizations to consider for Store re-designs and new implementations.

The ETG eCommerce team will use these tools to optimize your online shopping system for your target buyers.



The User Interface: Best-Practices for an Optimal shopping Experience.

Intent, Flow, and Reputation-building

Set clear paths to purchase

The only reason your eCommerce site exists is to achieve its end goal, the purchase.

You need to make this result all but unavoidable.

Enabling a clear journey to purchase from every part of your site has multiple elements and is affected by many factors.

Is the CTA button for Purchase on every page and easy to locate? (Hint: It should be visible from any part of every page, regardless of device.)

ETG also recommends that your purchase CTA be viewable at the top, or side, of the page as your customer scrolls.

Collaborate with your marketing and design teams to ensure that everyone involved is working toward this singular goal. Regardless of how they get to your e-Commerce site, Facebook, Instagram, LinkedIn, Twitter, email, the journey to purchase should be clear, simple, and virtually inevitable.

Optimize the Shopping Cart and Checkout Process

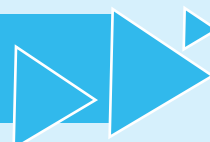
Cart abandonment is always high, [averaging 67.91%](#), and Mobile cart abandonment rates are higher. Anything you can do to decrease cart abandonment is worthwhile. With the increase in mobile eCommerce, you need to focus on the causes:

Causes of Cart Abandonment according to [Statista](#):

- 56% of consumers left due to unexpected costs (like extra shipping or taxes)
- 37% did not purchase because they were just browsing
- 36% found a better price after comparison-shopping
- 25% left because the navigation was too complicated
- 21% felt the process took too long
- 17% were concerned about security

Tried and True Customer Recapture and Cart Abandonment Reduction Techniques Increase Trust in Your Online Shopping Site

- a. Online shoppers put lots of faith in the vendor when they make an online purchase; they're about to hand you their personal and financial information.
- b. Your site MUST be SSL secured, luckily Chrome and Firefox warn users if the site is unencrypted. Likely, you've already done this.
- c. Prominently display the trust logos on your site such as well-known security logos (Verisign, PayPal Verified, etc.)



Stop the Shock – Price Shock

- a. A top reason for cart abandonment is unexpected costs. Most often – this concerns shipping expenses,
- b. Place shipping costs at the BEGINNING of the buying process and display them in a clear and prominent place. If it's variable, add a shipping calculator tool – again at the beginning of the purchase process,
- c. If you can, provide reduced shipping costs by offering free or discounted shipping based on the order value, (or some other metric appropriate for your products and services)
- d. The easiest way to turn away a sale is to add expenses to the purchase at the last moment. Your shoppers will quickly look for alternative online purchase options.

Send Cart Abandonment Emails

- a. Early in the Checkout process, you captured their email address. If someone abandons their cart, you can easily reach out,
- b. Use an autoresponder to email notifications. Immediately let them know that they left items in their cart. Over the next day, send 1 or 2 follow-up emails,
- c. In your emails, show them the things they left in their cart. Include CTA that invites them to complete the process,
- d. Sometimes this is the time to offer a discount or promotional coupon for their NEXT order.

Provide a Guest Checkout Option

- a. Don't force shoppers to create an account; it feels like the buying process takes longer. Instead, offer a guest checkout option.
- b. NOTE: You'll gather most of the information used to create an account when getting the shipping info; Take this opportunity and offer to “Save their information” for future orders.

Personal Outreach

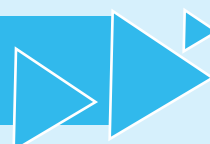
- a. Autoresponders shouldn't be your only proactive abandoned cart defense. When you get an abandoned cart notification, have one of your customer service team ask if there's anything they can do to help.
- b. Maybe they had a coupon code that didn't work, a problem with getting a card authorized, or some other easily solvable question.

Plug your Leaky Funnel

- a. Google Analytics offers insight into the behaviors of your visitors. Rather than making assumptions about what is wrong or trying to test various conversion issues, examine the visitor flow and conversion pathways in Google Analytics.
- b. You might discover bottlenecks on product pages, or see the points where your traffic is dropping off before making it to the cart.
- c. Use this information to review and revise those pages to improve the user experience.

Remarketing to the Rescue

- a. Expect a certain amount of cart abandonment. But fight for their business an attempt to recover them with Facebook remarketing. A Facebook tracking pixel placed on your site will capture visitor behavior and store data while attaching a cookie to the visitor.
- b. You can then create a Facebook ad campaign that targets custom audiences, (Example: people who visited your site, but who bought nothing)
- c. Now you can present dynamic ads to those customers based on the products they viewed to win them back.



Simple, Simple, Simple, Navigation

- a. “The more times they click, the lower your chance of closing the deal.”
- b. Memorize it.
- c. According to **Statista**, 25% of people who abandon carts because of overly complicated navigation.
- d. How many clicks to Checkout? 3.

Choose the Product

- a. Add to Cart
- b. Click “Checkout”
- c. At the beginning of this document, I discussed “Ease of Navigation,” it's a critical and vital element of your eCommerce success.

Tell Your Story Visually

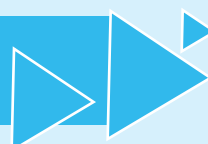
- a. I love the convenience of eCommerce, I do. But I also know it's hard for many to accept because they can't touch, pick up, and examine the products. When people can't determine whether a product is a good fit for their wants and needs, they're less likely to make a purchase.
- b. Your Storefront provides an ambiance, just as a Store owner & employees convey an attitude. You need to express all this digitally,
 - a. Use images and videos to communicate.:
 - b. Add multiple product photos from every angle.
 - c. Use high-resolution images.
 - d. Include pictures that tell a story about how the product will benefit the customer.
 - e. Show the product actively in use.
 - f. Add videos to your products that convey the ambiance and attitude that makes your company or brand special Include a Users Manual they can view online or download to get the technical info they might need.
 - g. Highlight the core value proposition and highlight the benefits from the customers perspective.

Validity & Testimonials – aka Social Proofing

- a. When people are on the fence about a purchase, YOU need to protect against buyer's remorse.
- b. You never want a shopper to regret their purchase. Social proofing alleviates that concern by showing how your products have helped others.

How to social Proof your site

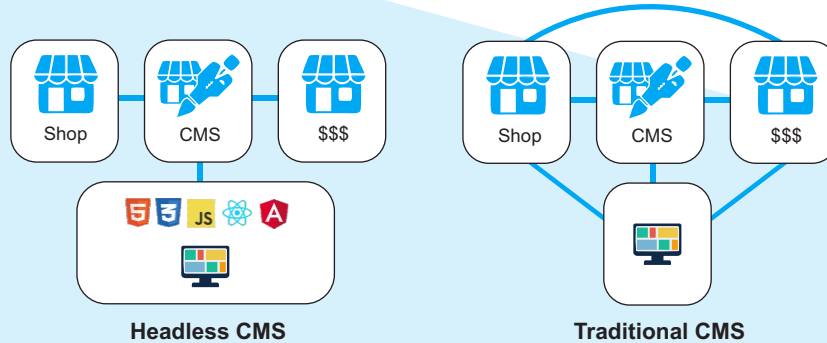
- a. Follow up with your customers and ask them to provide a product review
- b. Feature reviews on product pages and list testimonials on other landing pages of your site



Headless Architecture and the Salesforce “Mobile-first” Storefront Reference Architecture (SFRA)

The Beginning: "Headless" Commerce

"Headless" Commerce Architecture ("Headless" for short) is the separation of the front-end and the backend of a website.



The front-end represents the shopper experience, including the images, the text, the site layout, and all other elements of the user interface. The backend represents all the business processes part of the shopper experience, the eCommerce services involved, and the data and transactions underlying it (like Search, Promotions, Pricing, Inventory, and Checkout).

Headless Commerce Architecture Simplifies your Development Cycle

In traditional eCommerce platforms, the front-end and backend are tightly coupled and interdependent. Changing the User Interface requires that your System Implementation Partner or in-house developers customize the look of your site by modifying the built-in framework, augmenting it with lots of customizations, then releasing an entirely new eCommerce website.

In a "headless" commerce architecture, we decouple the front-end (the head) from the back end, and APIs bridge the gap, delivering the content like products, blog posts, or customer reviews to any screen or device. Each operates independently, and changes to one, won't require changes to the other; A significant improvement in site flexibility.

Why Go Headless ?

To stay relevant, adapt, and provide what consumers expect.

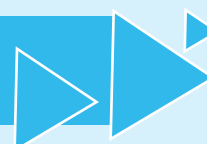
From Salesforce:

84% of customers say the experience a company provides is as relevant as its products. But research shows that only 27% of B2B decision-makers said their businesses had tried to maximize revenue in the digital age.

Customers engage with your brand via your website. Past ways to interact include desktops, laptops, tablets, smartphones, etc. Today, shoppers already expect to interact with their Alexa, Smartwatch, IoT devices like refrigerators, and even cars can interact with your site. The list of connected devices is growing every day.

Headless Commerce architecture is designed for the Mobile and IoT era

Each Device might have its requirements for technically interacting with your eCommerce site. Each of these UI/UX code sets is called a "Head," the Front-end of your platform. When your platform is "Headless," you can quickly build the interface for ANY device, and you know that it will adequately connect and work with your backend. No rebuild of your entire system – you create an unlimited number of "Heads," a new one each time someone invents a new device.



12 Benefits of Headless Commerce Architecture

Benefits for: Business, Technology, and Developers

The Future is NOW: Omnichannel

Top companies, intent on building a long-term brand, understand that they need to deliver their products and content on every new device. Mobile is just one. Alexa skills for verbal orders, IoT for dynamic ordering through smart devices, Autos, – and whatever gets invented next.

Every few weeks, a new, IoT intelligent appliance becomes available. For online retailers, headless architecture is the *only* way to keep up with the rapid rollout of modern technology - and shopping channels.

Omnichannel works

In 2017, a study published in the Harvard Business Review showed that of the over 46,000 shoppers surveyed, those using multiple channels made more online purchases than those using only a single channel. And, omnichannel shoppers purchased more at the brick-and-mortar stores.

Fast Front-end Deployment

Traditionally, the Marketing team routed UX changes for the website to the Developers, who then integrated their modifications with the entire site codebase. Users of headless commerce platforms bypass this step and deploy their changes independently, with no developers.

Powerful Integrations

Headless Commerce Architecture facilitates connection with external systems. The decoupled UX means that the developers focus on the backend systems without concern for front-end issues. Both teams, Designers, and Developers can work at full speed without interrupting the others' progress.

Rapid Time-to-Market

Scaling online shopping sites and making substantial changes is dreadfully slow on legacy platforms. Using headless commerce technologies, companies can design new front ends (Heads) quickly.

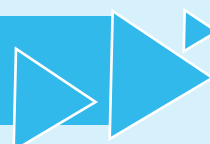
- When a "hot" new Smartwatch is released, the IU is designed rapidly and then rolled out. No need for costly backend development.
- Do shoppers complain about a UX? Then re-design and deploy. It's fast, and you can update as soon as you're happy with the new design.

Personalization – to the MAX

Headless commerce lets companies deliver a bespoke experience on every device. It's omnichannel and tailored to each use case. Personalizing the customer experience is more natural and uniform across all devices, leading to an improved online retail experience.

Increased Audience = Increased Revenue

Headless commerce helps you quickly launch your brand and products on digital devices. You'll increase awareness, leading to additional sales opportunities.



Benefits for Customers, Sales, and Marketing

An Agile Approach to Sales and Marketing

Marketing teams can roll out multiple sites across different brands, divisions, etc. faster with a Headless platform. Since the UI can be changed so quickly, it's easy to build new eCommerce sites in days, not months.

Better Customer Experiences

A consistent User Experience (UX) across all devices and channels reinforces your brand. The headless commerce architecture ensures that your website works as intended on all devices and viewing formats.

Rapid Updates Connect New Products and Content to Customers Quickly

Immediately after a business introduces a new product or updates on the front-end, those updates appear almost instantly on the site. Legacy commerce systems don't have this rapid update capability.

Consistency Across Channels

Designers and UX specialists commit changes to the front-end. The UI/UX is in the hands of the department best equipped to provide a unified look and consistent voice throughout the omnichannel market.

Conversion Optimizations A/B & C Testing for UI

Headless commerce technology lets you quickly try different UI approaches. By Templating the front-end, multiple versions can be tested easily, without the hassle of rebuilding an entire platform.

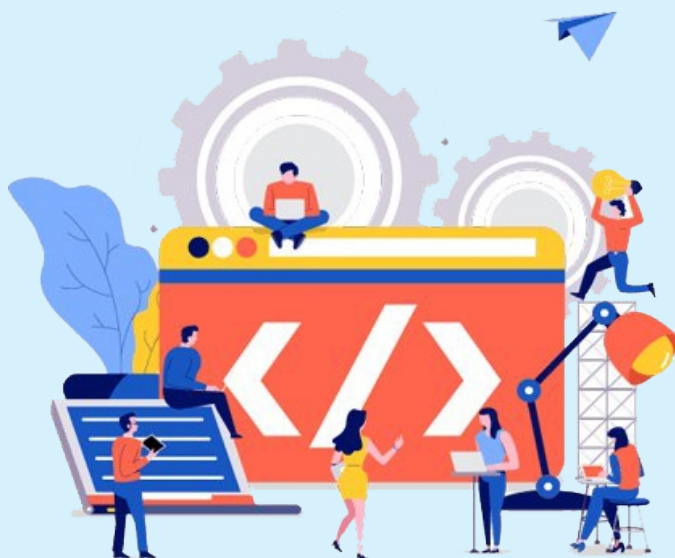
And vice-versa too! You can test different AI, Personalization, Search Algorithms, etc., without changing the front-end UI.

For Sales and Marketing teams, the testing and improving these functionalities without major rewrites adds options never available before, promising rapid advances in revenue generation and UX improvement.

Stay Competitive

Headless commerce platforms make it possible to adapt and respond to new technologies quickly.

The technological advances with this architecture reduce development time. Simply modify the UI/ "Front-end," for any new platform, while your core eCommerce system remains unchanged. The "Headless part means you don't have to build and rollout entirely new systems, just a module that addresses the new functionality.



How SFRA Fits into the New Paradigm

This new architecture adds a much-needed mobile-first approach to professional eCommerce platforms, including Salesforce Commerce Cloud via the SFRA. Mobile alone accounts for over 60% of shopping visits, and IoT devices will affect the need for rapid changes in your UX.

2020 will be the year that mobile online sales overtake online desktop sales. IoT may soon follow.

One of the best Optimizations is to Migrate to a Headless Commerce Platform.

What is SFRA, and How Does it Fit within the Headless Commerce Architecture?

Now that we've defined and established the benefits of a "Headless" Commerce Architecture and it's crucial to your long-term success, let's dive into the Commerce Cloud Storefront Reference Architecture (SFRA).

SFRA is appropriate for all companies planning to leverage the latest technology.

The world of eCommerce is changing so rapidly that the only way to keep up with these changes is to migrate to a "Headless" Commerce Architecture. Legacy eCommerce platforms struggle to keep up with ever-changing customer expectations, and this constraint was a crucial factor in developing the Headless Commerce Architecture.

Salesforce allows for both pure "Headless" architecture *and* it provides an advanced framework that jumpstarts your development with its own front-end toolkit the "Commerce Cloud Storefront Reference Architecture" (SFRA). SFRA features same technical concepts as headless, in that provides a de-coupled front end, but it adds an entire suite of additional functionalities that radically improve your development.

BOTH headless and SFRA can be implemented in parallel on Commerce Cloud. SFRA is Salesforce's solution to creating, tailoring, and delivering content across every commerce experience. It's the "Head" portion of the Commerce Architecture, and it makes it easy for you to build, maintain, and update your storefront(s). SFRA includes all the essential elements needed to develop your Storefront: Cart, checkout, homepage, Product Pages, and more. The prebuilt out-of-the-box framework combines site design best-practices, merchandising, and technical architecture.

The ETG eCommerce team will use these tools, and more, to optimize the online shopping system for your target buyers. We customize and extend the SFRA codebase to create unique customer experiences tailored to your brand.

Using SFRA, ETG Helps Your Business

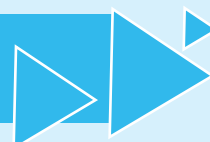
- Improve shopping experiences on mobile web, IoT, and other unique devices,
- Reduce your Storefront Total Cost of Ownership (TCO) and stay up to date
- Innovate faster, responding to client expectations and new technologies *BEFORE* the competition.

SFRA: How it Works

SFRA is a starting point for your storefront design, combining best practices in site design and storefront layout; It's a Mobile-First blueprint for building and customizing your entire eCommerce site.

The Storefront Reference Architecture uses JavaScript controllers. In B2C Commerce, these controllers are server-side scripts that handle the storefront requests. They manage the flow of control within the application, create instances of models and views to process each storefront request, and then generate the appropriate response.

For example, when your shopper clicks a new Category menu item, or types a new search term, SFRA triggers a controller that renders the page.



Best Practices UI Development

The SFRA uses the popular Bootstrap front-end component UI library. Bootstrap is an open-source toolkit for developing with HTML, CSS, and JS. It lets you quickly prototype your ideas or build your entire app with its SASS variables, Mixins, responsive grid system, prebuilt components, and jQuery plugins.

SFRA Tools: Cartridges

As developers, ETG uses SFRA to segment B2C Commerce code, client customizations, and third-party integration code into discrete cartridges. We can maintain and update each without changing the core B2C Commerce code.

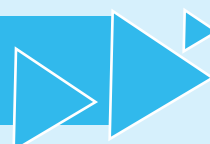
In B2C Commerce, a cartridge contains either code or data. As developers, we build new components, features, and customizations into these cartridges. Then, "plug" the new cartridge into the storefront.

The LINK Technology Partner Program allows vendors like ETG to publish cartridges as best-in-class eCommerce solutions for others to use.

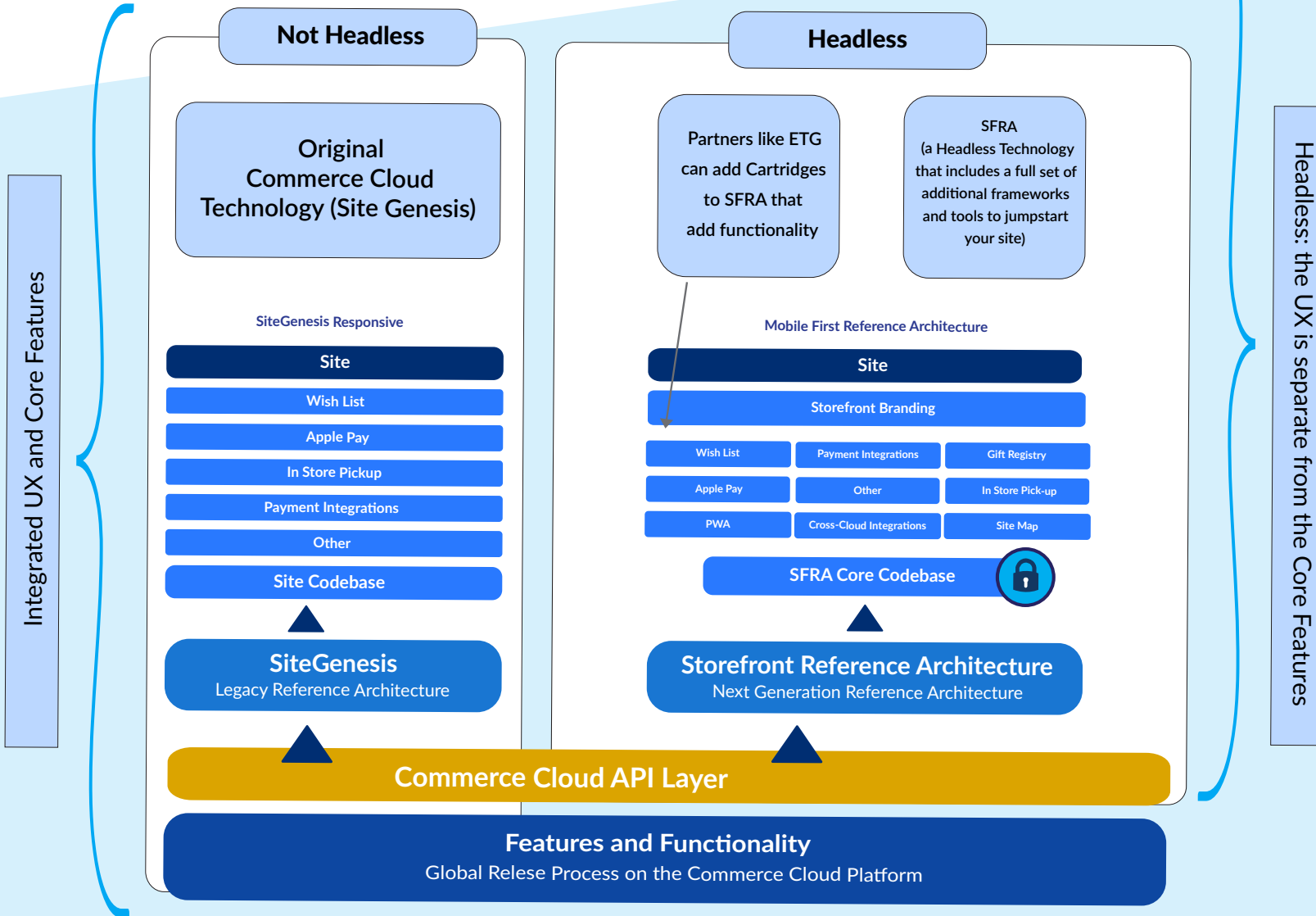
Popular LINK cartridges include

- PayPal (Payment)
- Adyen Payment Services (Payment)
- CyberSource (Payment)
- Bazaarvoice (Ratings and Reviews)
- PowerReviews (Ratings and Reviews)
- Avalara (Tax)
- Experian (Address Verification)
- Tealium (Tag Management)
- Olapic (Social)
- Certona (Personalization)

This architecture, and cartridge solutions, ensure a lightweight and clean codebase that allows continuous, iterative, and evolutionary platform enhancement. The core B2C Commerce code is never modified by the developer, so updates from Salesforce don't overwrite new functionality.



Generic View of SFRA and the Headless structure



Commerce Cloud: Page Designer

The heart of SFRA is the ability to design your storefront using the new Page Designer. You can create, schedule, and publish your website in record time. It also makes customizing pages easy; you simply drag components onto the page.

It's all about "Clicks, not code."

Page Designer lets non-developers create, tailor, and deliver content across every commerce experience.

Starting with the Storefront template or using the built-in Framework, new pages are easy to deploy and update. You'll gain rapid time-to-market turnaround by letting your creative team focus on what they do best, optimizing the user experience to improve customer engagement and conversions. Plus, it's easier for developers to prioritize enhancements to the back end — all thanks to headless architecture and a core reason for the success of SFRA.

Page Designer: Technology and Functionality

Page Designer uses the SFRA app storefront base cartridge and a server module. This base cartridge contains the features common to most sites. Additional functionality is layered over it using plug-in cartridges, LINK cartridges, and custom code cartridges.

Storefront cartridges include wish lists, gift registries, Apple Pay, product comparison, and middleware capability.

Page Designer: Standard page types and components:

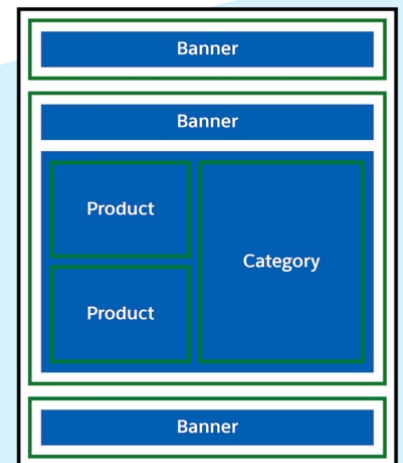
- Header
- Main banner or hero image
- Shop category
- Product carousel - Catalog
- Product carousel - Einstein
- Product tile
- Campaign banner
- Look book
- Photo tile
- Static content with Shop link
- Content mix blocks



Page Designer: Page Structure

Page Designer Elements: Pages, Components, and Regions

- **Pages:** The outermost container of the content.
- **Regions:** Contain components you can structure hierarchically.
 - Regions can contain other regions.
- **Components:** Have attributes that define the content asset.
 - Components can also be layouts, which can contain multiple regions to which you can add *more* components.
- **Attributes:** UI controls for configuring component attributes. Examples: drop-down list, text field, or true/false checkboxes.



- Page
- Region
- Component

For a complete guide to the features of Page Designer:

<https://developer.commercecloud.com/s/build-with-the-reference-storefront>

Additional SFRA Resources:

Customizing the SFRA Template:

<https://documentation.b2c.commercecloud.salesforce.com/DOC1/index.jsp?topic=%2Fcom.demandware.doohelp%2FSFRA%2FSFRAOverview.html>

Download the latest Bootstrap 4 release:

<https://trailhead.salesforce.com/en/content/learn/modules/cc-digital-for-developers/digital-ref-architecture>

<https://documentation.b2c.commercecloud.salesforce.com/DOC1/index.jsp?topic=%2Fcom.demandware.doohelp%2FSFRA%2FSFRAOverview.html>



Real-World Practical eCommerce System Optimizations



PRACTICAL Real-world eCommerce System Optimizations

Now that we've introduced you to SFRA and Headless Commerce Architectures, let's delve deep into practical optimizations you can implement on your site. Above and beyond the flexibility that Headless technologies provide, it's essential to focus on core optimizations that can quickly improve your online store.

SEO: Simple Site Structures are Best

Your sites' page organization and its' URL structure impacts both your search engine ranking and the user experience (UX). You know that it's essential to make it easy for customers to navigate your store, but often overlook that Google and other search engine ranking factors are affected by this.

Streamline and Simplify the Navigation

As your site grows, Category pages and Product pages can become buried deep within one another, creating a convoluted mess. It's also possible that as you add and remove pages, you end up with orphaned content (pages with no links pointing to them).

Establish the structure ahead of time to avoid restructuring your site every time you add or remove categories of products. If you are uncertain about taking the time and effort to rebuild your Storefront, Do it. Whether you're migrating from an eCommerce platform or creating a new Commerce Cloud store, use the "Supply and Demand" approach to re-structure your site, establish the content and navigation, and the order of priority for each step.

Supply and Demand Approach:

Identity which Categories of products are of most value to your business, restructure them, and then index and optimize.

Write great Product descriptions

As with everything on the internet, Content is King. Write short, but Excellent Product descriptions for all your products.

Content is King

<https://textoptimizer.com/o?engine=google>

Some people forget that just like every business website good content is incredibly important.

Optimize Your Product Titles

Product Titles should be MORE than the name of the Product.

Titles provide more opportunities for your Products to appear in organic search results. You'll get higher conversion rates because shoppers are more likely to know if they're interested in your product *before* they open the page.

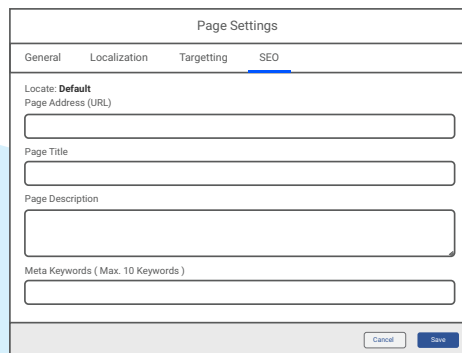


Customize Meta Descriptions and Page Titles

Title tags and meta descriptions are vital on-page optimization elements. These tell search engines about each page. Commerce Cloud features meta tag fields that can be customized, bulk import tools that auto-generate meta tags, allowing for easy uploads and optimizations.

SEO Settings for each Page

Under the Page Settings options: set the URL, title, description, and up to 10 meta keywords.



Page Settings			
General	Localization	Targetting	SEO
Locate: Default			
Page Address (URL)			
<input type="text"/>			
Page Title			
<input type="text"/>			
Page Description			
<input type="text"/>			
Meta Keywords (Max. 10 Keywords)			
<input type="text"/>			
<input type="button" value="Cancel"/> <input type="button" value="Save"/>			

More information about Page Settings:

<https://documentation.b2c.commercecloud.salesforce.com/DOC1/index.jsp?topic=%2Fcom.demandware.dochelp%2FSearchEngineOptimization%2FCreatingPageMetaTagRules.html>

Use SEO-Friendly URLs

URLs should be short, helpful to users, and useful for search engines to understand each page.

Commerce Cloud constructs custom URLs that can define product attributes, descriptions, or geography. It also has built-in tools to fix URLs.

Examples:

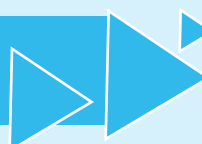
Commerce Cloud can automatically spaces () with a dash (-) and a Character Replacement tool that replace special characters like “&” with a dash (-). OR

Replace underscores (_) with hyphens (-) to separate words (an SEO best practice).

The URL structure matters

URL Guidelines from Moz:

- Design your URLs for real, live humans to read and interpret. Accessibility matters to Google
- Using your keywords in URLs is highly encouraged, they DO show up in search results
- Short URLs are better than long URLs. Try to keep them below 60 characters
- Match the URL and the page Title closely
- Don't waste vital character space with words like “and,” “of,” “the,” and “a.”
- Keyword stuffing and pointless repetition DO NOT trick Google anymore, and your store will look “dated” and Spammy.



Focus on Canonical URLs and No Duplicate Content Allowed

Search engines want the content to have **ONE (1)** official location, and that location is called the canonical URL.

With an organized URL structure plan, Commerce Cloud can create canonical tags. These are important because when search engines see the same content on more than one URL, they may devalue one, or both, of the URLs for containing duplicate content.

If two URLs with duplicate content are indexed, links pointing to each version will cause both URLs to compete against the other, lowering the ranking for both.

Canonical URLs also send the best “authority” signals to search engines.

Need to find duplicate content ASAP?

Here's a useful tool:

<http://www.siteliner.com/>

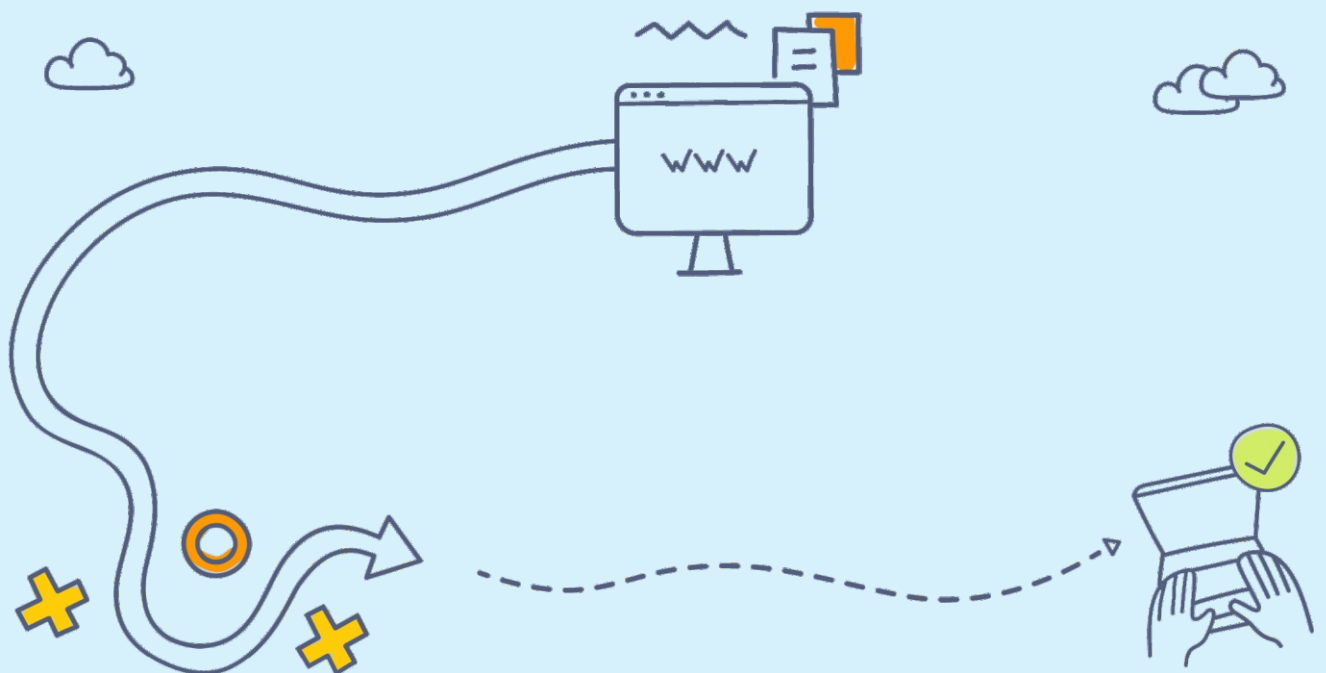
Automate Your Sitemaps.xml for Optimal Crawler Effectiveness

Commerce Cloud includes a feature that automatically generates XML sitemaps on a schedule. Run the sitemap job during the night, or when your conversion rate is the lowest.

Sitemaps help humans, and the Google/Bing/Other net robots navigate your site efficiently, allowing pages to be indexed and updated regularly.

Transfer ranking from earlier pages using Redirects and URL mapping

Permanent 301 redirects send a user from one URL to another. Redirects are essential for transferring rank from a legacy page. Commerce Cloud lets you set mapping rules, creating 301 permanent and 302 temporary redirects.



404s & 410s - Broken URLs

When pages are removed or broken, they result in a 404, or a 410, status code (Error code) Commerce Cloud has a tool that can detect these errors BEFORE your shoppers find them. Locating broken links is essential to overall site health and plays a role in monitoring the ebb and flow of referring domains. If a referring domain links to a broken page, you'll want to know that so you can fix the page, or if the page was removed, implement a redirect.

More about how Salesforce Commerce Cloud manages 400 errors

<https://documentation.b2c.commercecloud.salesforce.com/DOC2/index.jsp?topic=%2Fcom.demandware.dochelp%2FSitePerformance%2F404Errorsand404Pages.html>

Create a Customized 404 (and other 4xx) Pages

A 404 message is what a user sees when they reach a non-existent web page. A custom 404 page helps people find the information they're looking for and provides helpful content that encourages them to stay on your site.



Oopsie! Something's missing...

It seems like we donut find what you searched. The page you were looking for doesn't exist, isn't available or was loading incorrectly.

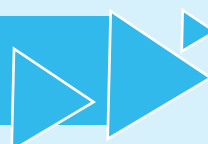
[Back To Home >](#)

Commerce Cloud includes a customizable 404 page.

Since this was an error of some form, Best-Practices suggests that self-deprecating humor is a great tool.

Here are some 404-page suggestions from Salesforce:

- Information: State, in plain English, that the page they were looking for is no longer there.
- Merchandizing: Add top featured products, viewed, or searched for products.
- Sitemap: Include a sitemap or menu that allows the customer to return to the site.
- Search: Include a search box so that the customer can search for a new topic.



Add Image - ALT tags (Attributes)

Image ALT tags and image filenames are vital for SEO success. These are the primary ranking factors for image search traffic, and by including keywords within an image alt tag, search engines can present your images during more queries. The image Title tag and the ALT tag should consist of words and phrases relevant to the image AND your Product.

ADA Compliance for Images

When a visitor using a special screen reader or similar device visits your site, the ALT text will be read to them. This provides the key information about your product, making buying decisions easier. **The ALT text** should use descriptive words and phrases that describe your product or service.

By adding USEFUL ALT text to your images, you are serving two purposes, improved SEO *and* ADA Compliance!

Example

A suitable Image Name, AND ALT tag would be:

Image Name: "1929 Ford Phaeton Sedan - SKU 1929YDel9834 - Antique auto.png"

The Image ALT tag:



Do this

Image Name: 1929 Ford Phaeton Sedan - SKU 1929YDel9834 - Antique auto.png

Alt Tag:

Not this

Image Name: HDR-IMAGE-3-19-2020-145.png

Alt Tag: Leave the field blank, or HDR-IMAGE-3-19-2020-145

Automating your image ALT Attributes during Import

It's preferable to include a complete image ALT attribute, but this may not be practical right away.

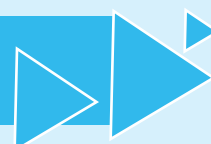
At a minimum, include the Product name as the image ALT text during the Product import/update process. If you can't, at least make sure your product images are getting ALT attributes set when you're adding new products to Commerce Cloud.

The Image name should *also* be the Product name, so there is valid SEO data. It also makes it easier during import; at the very least, you can set the ALT-tag as the image name during the import process.

Avoid blank, or ONLY using ALT attributes like SKU#'s.

Here are simple rules to follow for naming image files and ALT attributes:

- Use descriptive, everyday language; Ideally, write as your customers would when searching for products
- Products with a model or serial number should include this info, but ONLY if actual descriptive information is ALSO in the Title and ALT tags
- NEVER stuff keyword variations into your Title and ALT tags. Google can figure this out






Optimize your Media

Compress images to make them as small as viable. Think Mobile-first. If the speeds are slow, people have an exceptionally low tolerance for slow-loading pictures. Please note that approximately 50% of consumers won't wait over 3 seconds for a page to load.

To avoid losing sales, use compressed images optimized to load quickly on any device.

Images and videos play significant roles in eCommerce conversions. Customers can't pick up and touch products, so the media you include on your page is the key to them visualizing themselves owning and using your product.

Original Image: Beautiful young blonde woman in a black dress

Image 1	Image 2	Image 3
Resolution: 5760 x 3752 Size: 9.5 MB	Background removed + cropped to model Resolution: 2400 x 2654 , Size: 4.08 mb	Background removed + cropped to model + White background + Vertical resize to 1080 pixels Resolution: 977 x 1080 , Size: 112 k
		

Large image files slow the load time of your pages, directly affecting visibility now that Google includes page load speed in its ranking factors.

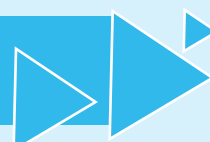
Page Speed Insights from Google:

<https://developers.google.com/speed/pagespeed/insights/>

If you can't compress and re-upload optimized images immediately, Commerce Cloud has a built-in image compression feature as part of its Dynamic Imaging service (DIS). There's no control over the compression used. But it works and is a reasonable place to start if you have no other options.

Commerce Cloud Dynamic Imaging service (DIS):

<https://documentation.b2c.commercecloud.salesforce.com/DOC4/index.jsp?topic=%2Fcom.demandware.dochehelp%2FImageManagement%2FImageTransformationService.html>



Review and Optimize your JavaScript

Most headless commerce platforms and Third-party enhancements use JavaScript. It's essential to optimize these code elements as well as identify and resolve performance issues that can appear.

Anomaly detection can take many forms, and there are great resources and tools available that can yield surprising results. You can add anomaly detection solutions to manage data quality, and automatically notify you when detected.

Forbes: Management AI: Anomaly Detection And Machine Learning

<https://www.forbes.com/sites/davidteich/2019/01/09/management-ai-anomaly-detection-and-machine-learning/#2be108fd3223>

5 Common Causes of JavaScript Errors

<https://geekflare.com/javascript-common-errors/>

Client-side error detection tool:

<https://trackjs.com/>

11 Best JavaScript Unit Testing Framework and Tools

<https://geekflare.com/javascript-unit-testing/>

Minify Your HTML, CSS, and JavaScript

Minification of Commerce cloud HTML, CSS, and JavaScript compresses the code without affecting the operation of the code. This procedure removes or modifies unnecessary characters (Examples: Removes characters as white space, new line, comment out code, etc.) modifies as HEX color, defined variable to minified characters, and finally, it places all the code on one line.

Minification can **reduce the code size by 10% – 95%**, helping your eCommerce site run faster and earn higher Search Engine Optimization (SEO) scores.

Anecdotally, the HTML generated by Commerce Cloud uses far too much whitespace. Minification streamlines and optimizes your site. In this competitive world, with high demands and lots of traffic on your website, all optimizations are valid.

Minification will reduce your code from 10% – 95%. Your website will be running faster and get a higher SEO score.

Minification tools:

HTML:

<https://www.textfixer.com/html/compress-html-compression.php>

<http://minifycode.com/html-minifier/>

CSS

<http://minifycode.com/css-minifier/>

<https://github.com/cssnano/cssnano>

JavaScript

<http://minifycode.com/javascript-minifier/>

<https://github.com/mishoo/UglifyJS2>



Use Inline CSS and JavaScript for Rendering Above the Fold.

Another recommendation for website and eCommerce site optimization is to put your CSS and JavaScript within your HTML file. This technique is called Inlining.

Inline CSS (small CSS, not large amounts of CSS code) should be included within the <head> tags of your HTML file, while inline JavaScript (again, smaller-sized JavaScript code) can be included within the <head> tags, or in the <body> tag.

Why? Isn't this contrary to traditional website best-practices?

You'll improve Page speed by including small CSS and JavaScript snippets within the HTML file to avoid **additional round trips**. If one or multiple files contain little CSS or JS, including them within your HTML document can cause more efficient load times. It's also an excellent method to reduce the latency that blocking CSS causes, thus optimizing the critical path.

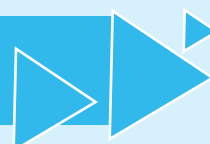
Is there a downside?

Possibly, the drawback here is that your CSS and JS code **will not be cached**. When you contain your code within the HTML file, the browser doesn't store it in cache, thus requiring it to fetch the full HTML file each time. So, if your HTML file is bloated with inline CSS and JS, then it could be more detrimental than retrieving an external CSS or JS file.

You want to inline the code critical for rendering the content users will see first. It helps users, and it yields better scores on Google's site page speed tools.

Switch to Adaptive Web Design

Mobile load times: Most headless commerce systems, and specifically, SFRA, utilize an adaptive design approach vs. a responsive design used by legacy eCommerce platforms. The adaptive approach helps your content load faster on mobile and IoT devices.



Distinctions between Responsive Design and Adaptive Design:

Responsive Design:

A responsive website displays its content according to the available display and browser-window size. When you open a responsive site on your desktop, then scale the browser window, the content adjusts dynamically to fit the browser window.

On mobile devices, the website automatically the device resolution and browser size, then present the material in the ideal arrangement.

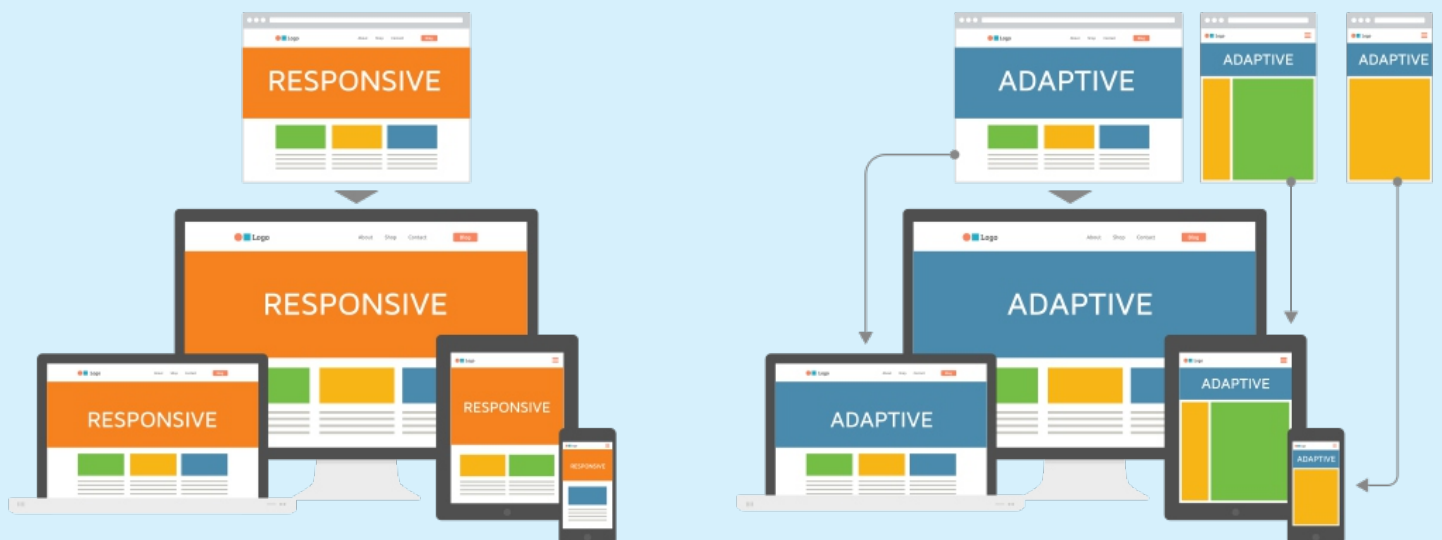
Responsive website design is more straightforward and takes less effort to implement.

Adaptive Design:

Adaptive design has multiple fixed layout sizes. The site detects the available dimensions and selects the layout most appropriate for each device. Adaptive designs are tailor-made solutions.

An Adaptive design ensures the best user experience because it's designed for each new device. Commerce Cloud and other Headless Commerce systems use Adaptive design. SFRA is a "Head" specifically intended to let you create a UX for every new device. As you discover new display technologies, you build a Cartridge for that device and use Page Designer to customize an optimal layout.

Research shows that sites using an adaptive approach often outperform responsive websites.



Integration-Specific Optimizations

Pre-built Standardized Integrations using Server-side queries:

For Commerce Cloud platforms, SFRA includes pre-built integrations with the Salesforce Commerce Cloud backend. These integrations perform faster than custom-built integrations.

Rules-Based Controls:

Unify and combine all your Page rules, so they automatically apply to ALL pages. Use single-page rules, because these quickly degrade overall performance.

3rd Party Technology Optimization and Sequencing

Review EVERY third-party product in use. The sequence in which they load and how they load can affect eCommerce site performance.

It's not uncommon to have 20-60 integrations and addons active on your eCommerce site. Each of these might be making ten-to-100s of calls, per page, to their different servers.

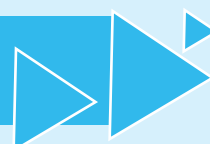
As with the Rules-based optimizations, take time to unify and streamline how you implement third-party products. There can be many significant speed and performance improvements by managing your use of addon cartridges and APIs.

Take a Deep Dive into your Integrations – The Devil is in the Details

Another goal of integrations is to automate steps, reducing manual efforts to the minimum. Saving steps and automating tasks increases the accuracy of information by removing human error.

Review the integrations already in place. Look into the actual workflow: What happens after the "other" system receives the data? Is a user expected to update any details or change the info somehow?

This 'Second-stage' effort drags down productivity and is a frequent source of human error. If you discover bottlenecks like this, improve and revise the integration to reduce all Second-stage effort.



Better Integrations Improve the Customer Experience

Connecting Salesforce and eCommerce platforms to the other systems within your business is necessary to save time, reduce errors, and drastically lower effort. The benefits of unifying your online retail and back-end systems are apparent. Successful integrations are even more vital to your customers.

The importance of integrations to the User Experience is higher than its ever been.

User Experience (UX) Examples:

- Uniform product information appears on every Omnichannel Point of Contact
- Accurate Inventory counts, Shipping notices, Payment, and Customer Service require a live flow of data – without which customers lose trust -quickly
- Improved customer confidence comes from Integrations: like when Shipping systems let your customers track their orders
- Accuracy in Inventory and shipping details are baseline expectations for today's online shoppers.
- Integration with ERP, Shipping, and Customer Service systems streamline the returns process, also a baseline for your customers

ETG relies on the Salesforce UI to maintain a standardized look & feel for Commerce Cloud users, and we follow the UI structure for implementations of other eCommerce platforms. SFRA and the Headless Commerce Architecture have made this easier.

Properly integrated systems improve your customers' shopping experience.

The most common integrations with third-party providers include payment processors, ratings and reviews, tax processing, and email services. They are the technological areas where a third-party provider can shine.

Third-Party Application	Storefront Page
Payment	Checkout
Ratings and Reviews	Product details page
Tax	Checkout
Address verification	Account Management, Checkout, Wish List, Gift Registry
Tag Management	Every page. Tags, embedded on each page, capture an event on a website or device, such as an IP address, user profile info, and anything the user clicks or views.
Social	Product details page, checkout
Personalization	Product details page, search results page, messaging



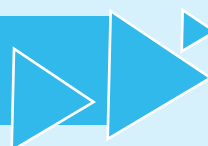
Repeat the Search for Second-stage Effort with *Every* Integration.

Salesforce Commerce Cloud relies on Apex Web Services for Inbound, and Apex Callouts for Outbound integrations within the business-logic integration process. These services allow Salesforce to connect with multiple systems simultaneously.

For Data Integration, Salesforce uses SOAP and REST APIs. This process manages the data synchronization. Data translation and custom rules and logic are performed within the API, thus externally from Salesforce. There's no need to customize the actual Salesforce code.

Most eCommerce platforms operate similarly, using APIs and "Cartridges" as logically structured integration tools. "Headless" Commerce Architecture and SFRA have further improved the integration options.

The Salesforce integration specialists at ETG have years of experience building custom integrations (APIs), using AppExchange products, and implementing sophisticated MuleSoft, Boomi, Jitterbit, and other integrations tools.



Salesforce Cross-Cloud Integration

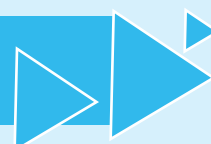
Today's Customer Expects a Seamless Journey across Service, Marketing, and Commerce, this Drive for Convenience is Transforming eCommerce, and It's crucial to approach your Cross-cloud integration tasks logically.

Creating compelling customer journeys is complex, and customers connect to vendors through more devices than ever before.

Technology Status: There are Many Paths to Cross-Cloud integration

Each Salesforce Cloud has its core responsibilities:





Marketing Cloud	B2C Commerce	Service Cloud	Analytics Cloud	Heroku
Messaging and Journeys	Customer registration	Customer identification and interaction history	Customer analytics	Data lake
Transactional emails	Conversion	Case management	Transaction analytics	Centralizing all sources of customer and transaction data
Transactional emails	Simple personalization	Omnichannel customer support	Centralized dashboards of online and offline interactions	Source of raw segmentation data for marketing-cloud
Segmentation calculation	Promotions	Order status and returns		
Customer attribution	Loyalty registration	Order on behalf Of ..		



Options vary depending on use-case complexity

Get to Know Your Integration Options

Options vary depending on use-case complexity

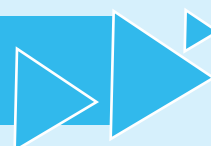
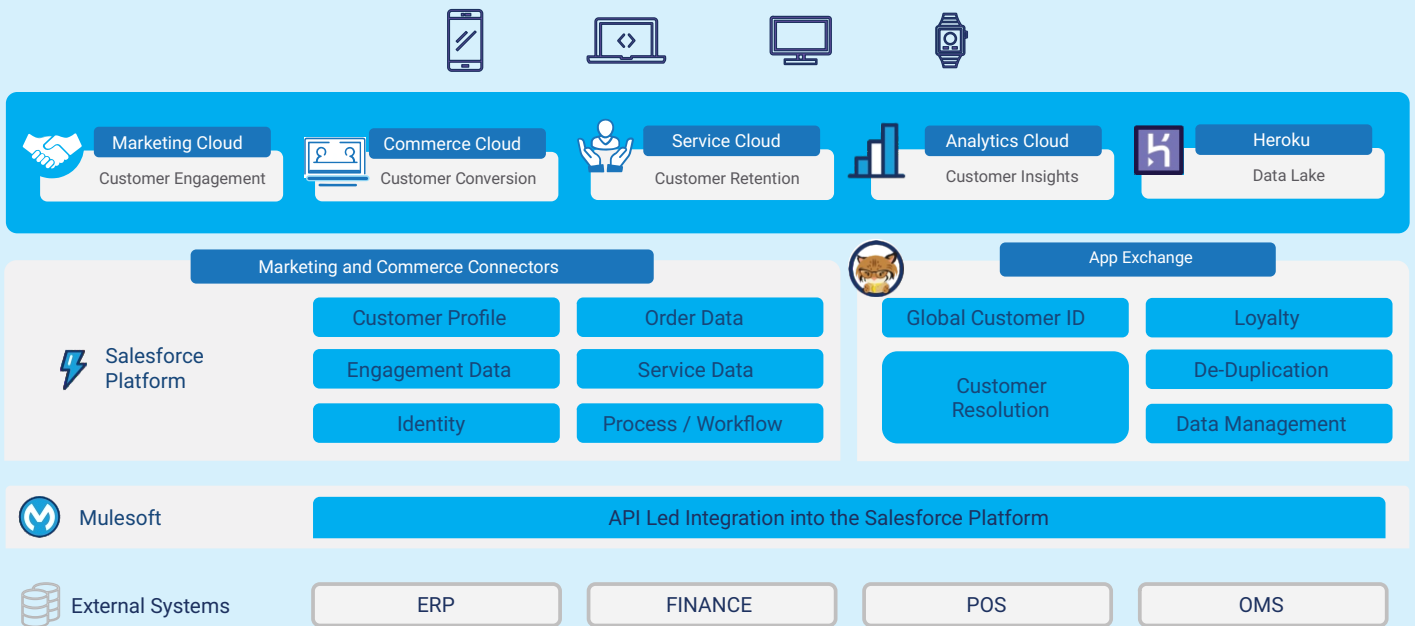
Connectors 	Mulesoft 	Heroku 	API 
Point to point between Salesforce applications	API based integrations	Heroku as a data layer	Direct integration
MC Connect Commerce to Marketing Commerce to Service EA MC Connector EA Postgres Connector	External systems into Salesforce Salesforce Clouds with Anypoint Exchange	Data lake for all customer data Complex business logic Heroku Connect	Extend existing connectors Only for use cases that are not covered by the other options
Low Custom Dev	Fully Custom Dev		

One Customer View: Reference Architecture

An overview of cross-cloud architecture including extension and integration models

One Customer View: Reference Architecture

An overview of cross-cloud architecture including extension and integration models



Salesforce Connectors

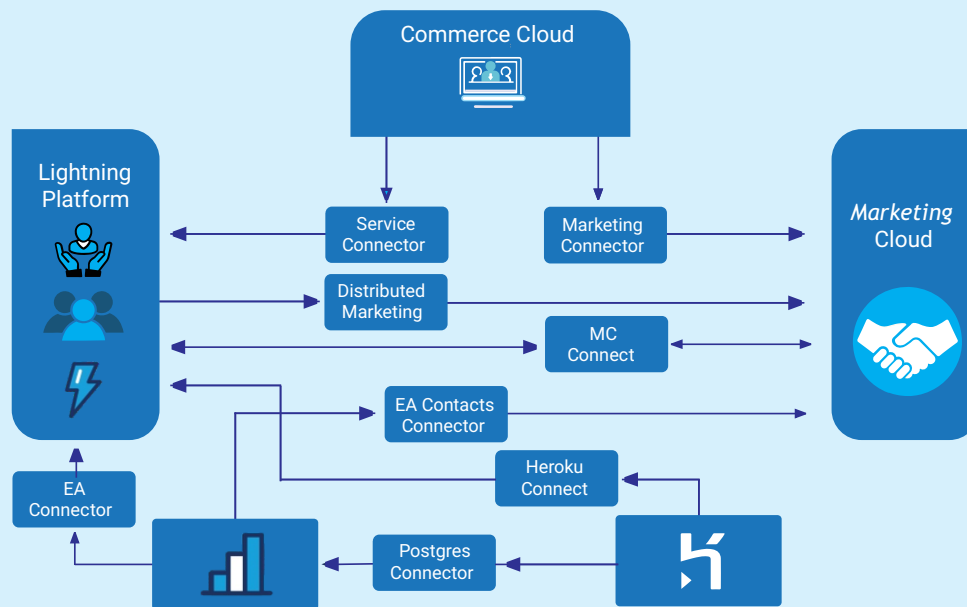
- These connectors provide reusable code to accelerate point-to-point integrations between Commerce Cloud and either Marketing or Service Cloud
- Implementation Considerations, especially 'Primary Keys' between Clouds, need to be considered to ensure that data flows back and forth as you expect.
- For example, Marketing Cloud needs the Primary Key to be the Contact ID in Service Cloud / Platform
- Follows the “cartridge” model for B2C Commerce
- Require configuration and development when used in multiple Clouds

B2C Commerce Connectors

Leverage REST / SOAP API endpoints across clouds for Point-to-Point Connection

Enabled by Point to Point Connections between Clouds

The B2C Commerce connectors leverage REST / SOAP endpoints across clouds



Solution Kits for Salesforce Connectors

Launched in March 2020. They connect Commerce, Marketing, and Service Clouds

Example eCommerce Use Cases

- Abandon Cart
- Personalized Recommendations
- Order Confirmation Email
- Personalized Offers/Coupons
- View Customer History
- Order on Behalf of Customer

Each Solution Kit Includes:

1. Use-Case Overview
2. Implementation Workflow
3. Configuration Guidance
4. Connector Overview
5. Considerations and Best Practices

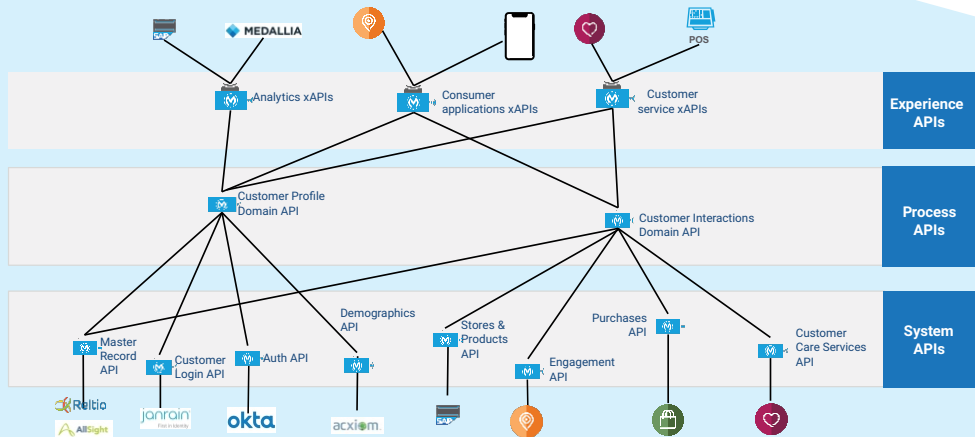
Mulesoft Integrations

Ideal for integrating multiple external systems across Salesforce clouds

- Mulesoft provides an API led integration approach that enables customers to bring data back and forth from external systems and Salesforce Clouds.
- This approach allows businesses to quickly add new systems and orchestrate how data to shared across clouds.
- Need to make sure you are looking at SOAP vs. REST API usage for the Integrations and WSDL versions.

Mulesoft Approach to API-led Customer 360

Layered api approach introduces operational agility and experience consistency



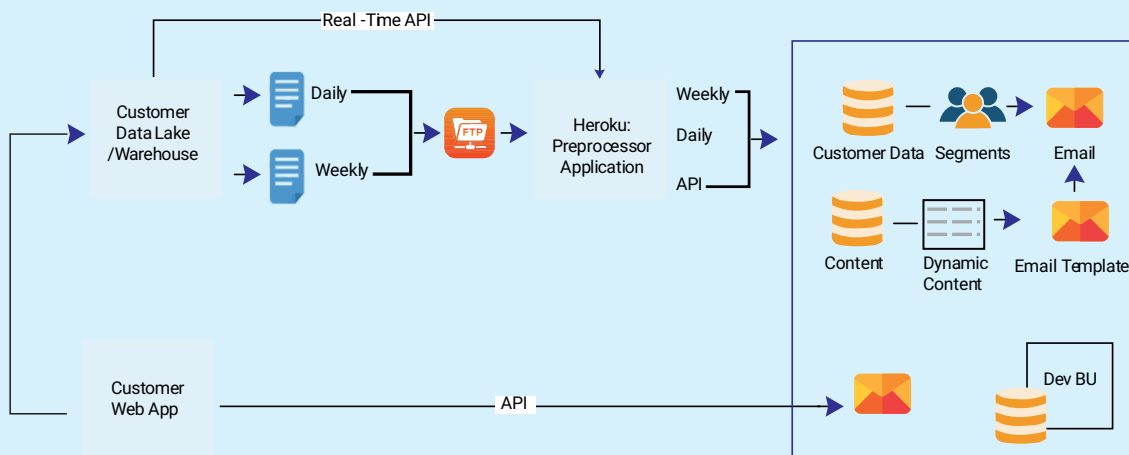
Heroku

Best when you need a Data Lake or need to perform Complex business Logic

- Heroku is a middle layer than can bring data in from external systems *and* other Salesforce Clouds
- When you have large data needs or need to access data frequently or transform data
- Can be a preprocessor to clean, dedupe, and format data prior for other Clouds
- Define advanced / Complex business logic
- When you hit API limits due to the large volume of API calls required

Heroku as Preprocessor for Marketing Cloud

Leveraging Heroku to implement data-strategy requirements



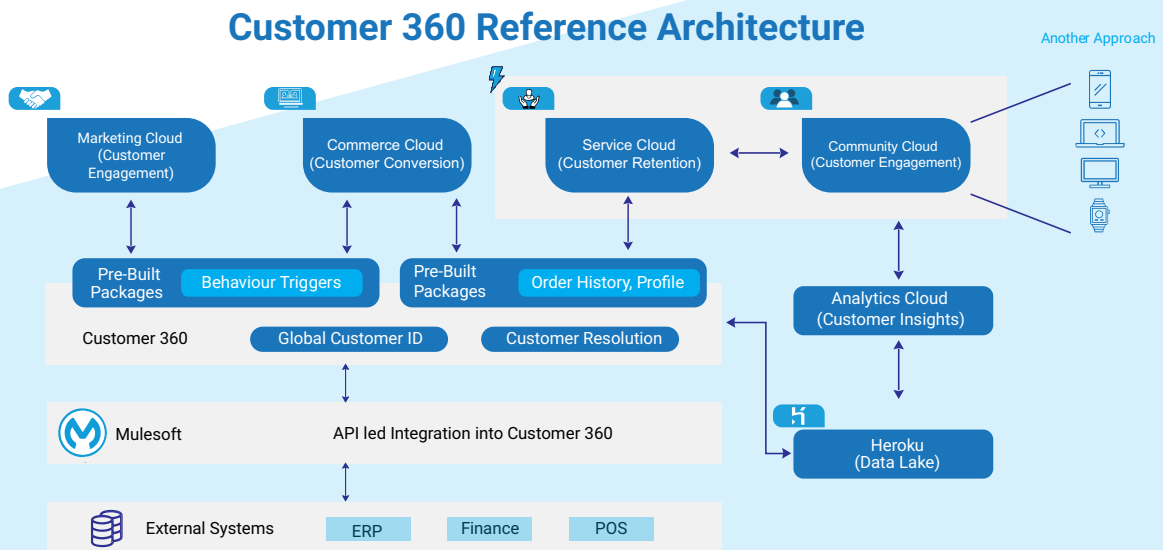
Integration Summary: There are Many Paths to Cross-Cloud integration

The Customer 360 initiative integrates all the Salesforce Cloud products on a deep level. You'll recognize every customer with a single customer profile. Now you can deliver personalized engagement across all your clouds *and* multiple orgs. Connections are seamless between apps and Salesforce orgs, and your data flows seamlessly between all your Clouds.

This deeper integration changes the integration paradigm by unifying and structuring cross-cloud data. This complete view of your customers, using a Single ID and profile across all your Clouds, will improve cross-channel customer experiences.

The Customer 360 Reference Architecture

As part of the roll-out, there will be pre-built packages for common B2C use cases.

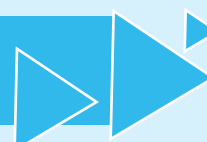


Integrating Your eCommerce System Solves Many Challenges:

- Unifying and automating the data flow ensures that multiple systems work together seamlessly
 - Connect multiple cloud-based platforms AND on-premises systems.
- Integration with complex custom solutions
 - Within an Integration Data can be modified and adapted to align with how other systems need it formatted. This automation reduces manual effort and reduces errors
 - Data often needs to be mapped to from one field to another or translated/merged with other data. the API/Cartridge performs all calculations and data manipulation
 - SFRA and the Headless Commerce Architecture have improved data Integration processes
 - Automating steps and data manipulation at this stage reduces "Second-stage" effort
- Integration with software systems in different locations.
 - Proper Integrations will connect disparate systems from across the globe – tying remote locations, systems together
- Tracking and auditing of information as it flows between applications
 - Integrations can help you track down anomalies
 - You can then update the API/Cartridge to account for the new scenario
 - You can modify API/Cartridge to flag occurrences and trigger manual intervention if there is no way to automate through the unique case.

Address the Most Critical Factors to Optimize Data Integrations for eCommerce:

- A) Integrations are apparent tools for business success, and the internal reasons for them are clear. Focus on using your integrations to improve the User Experience to Build Shopper Confidence,
- B) EVERY point of integration can also be a bottleneck; target not only the transfer of data but, more important, the Second-Stage efforts involved within each external system.



Conclusion

The world of eCommerce is exciting. It's continually changing, and customers are evolving and increasing their expectations.

I've included quite a few time-tested optimizations that every professional should implement – and I hope you find them helpful and instructive.

I've also made a **STRONG** case for going “Headless” with your technology. I've spent a lot of time defining the benefits of Salesforce SFRA, and I hope you see the benefits of migrating your eCommerce system in that direction.

I'd be remiss if I left out this final bit of information. ETG Global Services, Inc. can help you with everything I've mentioned in this document – and more. I wrote this paper as a tool and a helpful resource to assist everyone, but we'd genuinely appreciate an opportunity to earn your business.

For more about ETG Global Services, Inc. and our services, check out our website: www.etggs.com

I'm always available to answer your questions.



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