TRAILHEAD

Design and Build a Working Industries CPQ Solution

Solution Briefs

Version 1.0

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Introduction

As part of the *Design and Build a Working Industries CPQ Solution* course, you are asked to model two consumer packaged goods (CPG): the *Google Home* and *Amazon Echo* products. Of the two CPGs, the Amazon Echo is the most complex because it includes multiple models, SKUs, UPCs, colors, and color categories.

DEFINITION:
There are two acronyms used throughout this document that you may not already be familiar with. These are:

- **SKU = Stock Keeping Unit**: a (usually numeric) code assigned by your company to each product.
- **UPC = Universal Product Code**: a code assigned to the product by the manufacturer (so this will remain the same across all distributors).

This solution brief discusses three different possible solutions to the Amazon Echo modeling challenge. As is often the case in Salesforce Industries solution design, there is no single right answer. Instead, a master Industries CPQ architect can describe the benefits and limitations of each approach and will use that understanding to determine the best solution for any given deployment.

You may have landed on a different solution that will work equally well. As you read through this solution brief, consider your model's benefits and limitations, and see what changes, if any, you might wish to make after reviewing these approaches.

Understand the Requirements

Here's the brief for the Amazon Echo 4th Generation product.

Name	Amazon Echo (4th Generation)
Product Code	C-SSP-002
Description	Echo (4th Gen) has a better sound, new design, and is available in a range of styles. Echo connects to Alexa to play music, make calls, set music alarms, and more!
Unit of Sale	Per unit
Protection Plan	3 years for Business accounts (optional) 2 years for Consumer accounts (optional)
Model	B06XCM9LJ4 (charcoal) B0749WVS7J (heather gray) B0751RGYJV (oak) B06XXM5BPP (sandstone) B0752151W6 (walnut)
SKU	5982513 (charcoal) 6036000 (heather gray) 6130003 (oak) 5982610 (sandstone) 6130002 (walnut)
UPC	841667189741 (charcoal) 841667169699 (heather gray)

	841667179889 (oak)
	841667179704 (sandstone)
	841667187037 (walnut)
Colors	Charcoal fabric
	Heather gray fabric
	Oak finish
	Sandstone fabric
	Walnut finish
Color Category	Black (charcoal)
	Gray (heather gray)
	Tan (oak)
	White (sandstone)
	Brown (walnut)
Brand	Amazon
Target Market	Business and Consumer
Artwork	https://www.salesforce.com/content/dam/web/en_us/www/images/resources/training-images/echo_charcoal.jpg
	https://www.salesforce.com/content/dam/web/en_us/www/images/resources/training-images/echo_heathergray.jpg
	https://www.salesforce.com/content/dam/web/en_us/www/images/resources/training-images/echo_oak.jpg
	https://www.salesforce.com/content/dam/web/en_us/www/images/resources/training-images/echo_sandstone.jpg
	https://www.salesforce.com/content/dam/web/en_us/www/images/resources/training-images/echo_walnut.jpg

Consider the User Journey

Salesforce recommends a user-focused design approach. This creates better and more intuitive user experiences. When modeling products, challenge yourself to use a user-focused modeling methodology by making modeling decisions based on the following:

- What information does the customer need in order to buy this product?
- What information do your employees (sales and service agents) need to sell this product?

Let's think about the customer first. The details listed in the above product brief are read-only to the user once the model is selected, but how would they naturally go about selecting the model they want in the most efficient, quickest way possible? What are they likely to use to identify the product?

The most likely information they will have is the name of the product, right? However, depending on how much research they have done (and where), they may also choose to order using the SKU, UPC, model number, or description of the product.

Consider ways to ensure that the customer (and the sales agent) can search for each of these product details. Alternatively, they might just be browsing for an "Amazon Echo", in which case you might want to guide them through the selection process with, for example, picklists.

Once you have established a user journey that will make your end users happy, think about the impacts your decisions will have on the external systems consuming the order, such as the order management, fulfillment, and billing systems. For example, both customers and sales agents need a way to specify a color selection, but once the order is placed, color is not needed by the order management system since it can be "read" from the SKU or UPC codes.

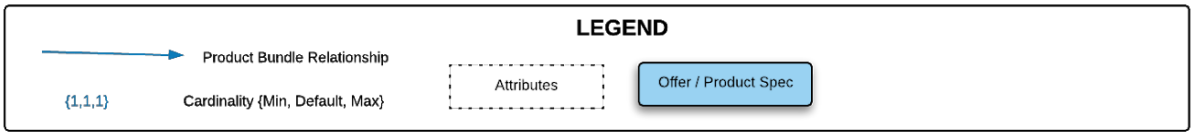
Potential Solutions

There are a number of possible options discussed in this brief. The first solution creates an offer or product for each Amazon Echo color and allows the end-user to select and configure their offer with just one or two steps.

The second solution uses just one Amazon Echo product or offer, with attributes to set the color, and may require slightly more configuration at runtime from the end-user.

Let's look at both solutions individually in more detail.

Please note that each of our product model diagrams illustrates the object types, names, attributes, relationships, and cardinality of the offers and product specifications included in the offer using the legend shown below.



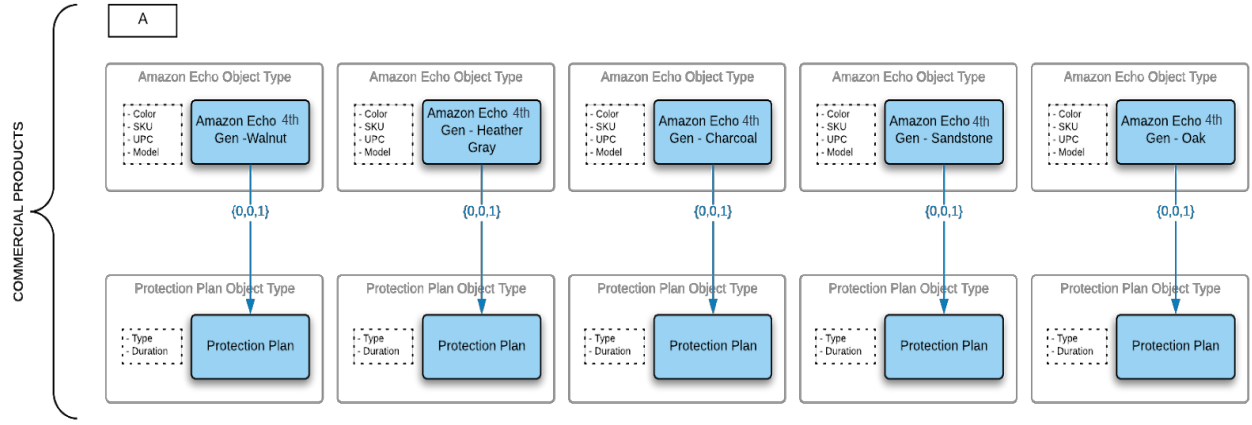
Solution 1: Full Configuration at Order Capture

What happens if you want to buy an Amazon Echo from the Amazon site? You search for *Amazon Echo* and straight away you can see all the different variations of Amazon Echo available, including model and color variants. When you pick the model and color you want, there might be optional extras you can choose as part of the offer, but the core information to place the order is already complete. Wow - that's an easy purchase!

If you want to replicate this approach in your own company, you would create a model similar to the one shown on the next page.

Option A: A Distinct Product for Each Color

Each Amazon Echo color is created separately and includes the correct combination of SKU, UPC, and model numbers. The customer selects their product, then decides whether or not to take up the protection plan before placing the order.



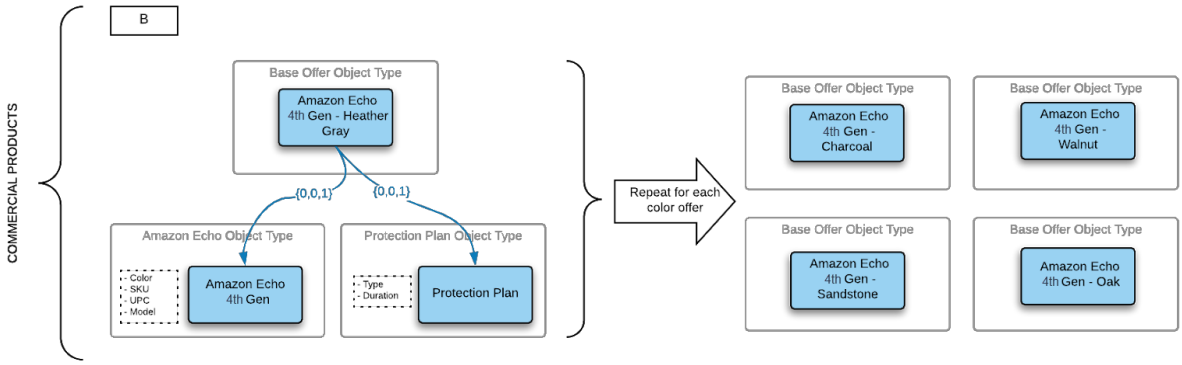
This is probably the simplest way to achieve a similar shopping experience for your users but is not necessarily the most efficient. For example, many of the Amazon Echo products are the same price - but using this model you would need to price every product separately (and update them separately when the prices are updated).

The next option has this covered!

BEST PRACTICE:
If you are working within the Communications Industry, check out the TM Forum Frameworx product models. Frameworx includes hundreds of best-practice models of products commonly encountered in the industry.

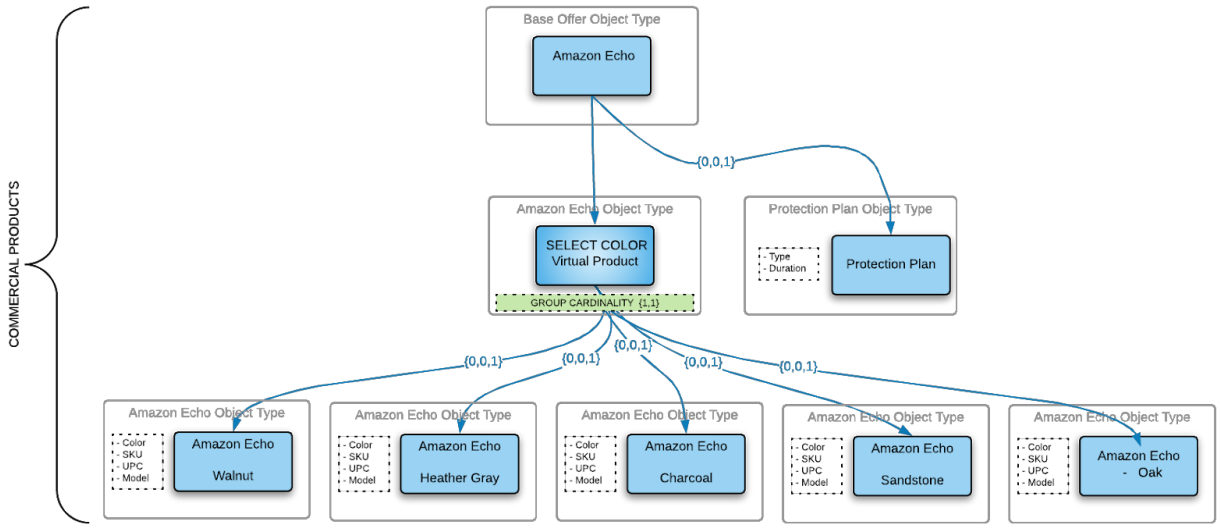
Option B: A Distinct Offer for Each Product Color

This example is similar to Option A except that an offer is included at the parent level, and this offer contains the pre-configured Amazon Echo and protection plan bundled products.



In this instance, attribute overrides are used in the context of an offer to set the correct model, SKU, UPC, and color. Bundling the products also allows for flexibility with pricing. The Amazon Echo product and Protection Plan could be priced individually and rolled up, or you can set a bundled price at the parent offer for both.

Alternatively, you can provide an option where the end-user chooses the Amazon Echo offer, then selects the color, as shown below.



In this example, you still have a separate product for each color, with all the associated data in each, but these are connected to a virtual product, which is created as a child of the Amazon Echo offer. Setting group cardinality on the virtual product ensures that users pick just one of the child products. The SKU, UPC, and model numbers can be included in the product description of the Amazon Echo 4th Gen base offer, which will allow it to be searchable in the Cart's product list.

This option may not be appropriate if each Amazon Echo color model has its own protection plan. In this case, consider either using one of the earlier product models or setting the UPC or SKU on the Protection Plan once the color of the product is selected.

Benefits of Solution 1 Options

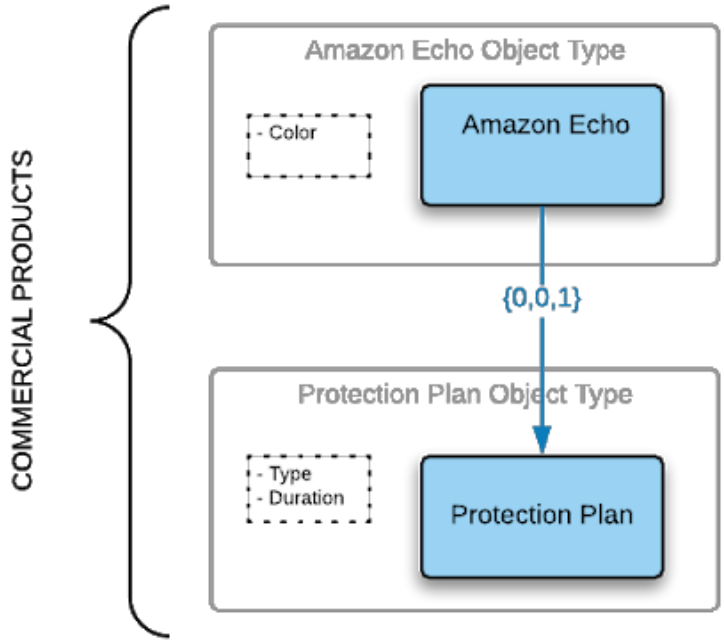
- Supported by the Shared Catalog.
- Tracks SKU and UPC for each variant of the product.
- No overrides necessary in the context of the Offer/Promotion for managing SKU/UPC. (Note - this is required for Option B.)
- If the Shared Catalog is the master, then SKU products can be exported and imported to SCM systems.
- SKU products can be ordered and fulfilled.

Limitations of Solution 1 Options

- Proliferation of products in the product list and Shared Catalog.
- Tall product bundles.
- If pricing is rolled up, the child product pricing is unknown until the parent product is added to the Cart.

Solution 2: Create a Configurable Offer

In this example, which is the most simplistic, you could model the Amazon Echo product with a run-time configurable color attribute. UPC and SKUs are not held in the Catalog or assigned at design-time or run-time during order capture, but rather assigned downstream in the fulfillment process, for example using decomposition rules in Order Management. The SKU, UPC, and model numbers can be included as part of the description of the Amazon Echo 4th Generation base offer, which will allow it to be searchable in the Cart's product list.



This will involve customizing your implementation, with additional work to ensure the configuration is completed correctly if any updates are made to the Amazon Echo in the future.

Benefits of this Solution

- Supported by the Shared Catalog.
- Fewer repetitious products appear in the product list.
- UPC is not stored in the Catalog.
- No overrides necessary in the context of the Offer/Promotion for managing SKU/UPC.
- Requires user configuration to select the color during order capture.

Limitations of this Solution

- Requires mapping of SKU number and UPC during order decomposition to drive fulfillment.
- Requires a field implementation to assign the SKU/UPC and model numbers on the asset during assetization in order management.

One major disadvantage of the above approach is that the downstream systems are responsible for ensuring the model number, SKU, and UPC are added to the asset when ideally this should be the responsibility of Industries CPQ. Therefore, an alternative option is to include SKU, UPC, and Model fields on the Amazon Echo object type which are updated in Industries CPQ at runtime before the order is submitted using attribute configuration rules, based on the Amazon Echo color selected by the end-user during the order or quote configuration process.

Yay! All done!