BRAVA Roof Tile - Automated Material Estimation & Quoting System

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Phase 1: Roof Report API Integration and Material Quantity Takeoff

Objective

The goal of this system is to automate material estimation and cost quoting for roofing projects. Using tools like Hover to capture accurate roof measurements, our backend will perform calculations to estimate material needs based on Brava's specific business model, ultimately generating a cost estimate for the customer.

Solution Overview

1. **Customer Sample Request**:
    - Users initiate a "request-a-sample" action on bravarooftile.com.
    - This user data is saved to Salesforce, where it can be accessed by Brava's team.
2. **Data Transfer via Salesforce Webhook**:
    - A webhook is registered on Salesforce to automatically push the request data to our backend system.
    - Upon receiving this data, the backend triggers the measurement process with Hover.
3. **Initiating Roof Measurements with Hover**:
    - The backend system sends a Capture Request to Hover with the project's address and other relevant details to start the roof measurement process.
    - Hover processes the request, and once measurements are ready, it sends a callback to our backend via a registered webhook.
4. **Material & Cost Calculation**:
    - Upon receiving the measurement data from Hover, our backend calculates the required materials based on Brava's predefined business rules and formulas.
    - Then the system will generate an estimated cost for the project, factoring in material requirements, waste percentages, and other business-specific considerations and then send this data to Salesforce.

Additionally, it would be helpful if we could create a developer account on one of the tools, such as **Hover**, to access data in API format. With API access to a JSON response, we could match values between the API and the PDF report. This would simplify the process of understanding value mappings and streamline calculations.

Phase 2: Automate Quote Generation and Delivery

Opportunity Creation

Once the backend estimates cost and material, an Opportunity will be created in Salesforce. The fields below have been identified as necessary for the Opportunity, with proposed values or formats for each. Please confirm if these align with your expectations.

Opportunity Fields

- **Opportunity Name**:
  - Proposed Format: `{Distributor name} - {Total Area Squares w.r.t Waste} - {Fire Rating} - {UV Rating} - {Color} - {Profile} - {Address}`
  - **Details**:
    - **Waste**: This value appears to be received via email; please advise if there's a preferred method for storing or retrieving it.
    - **Fire Rating**: We'd like to confirm how this value should be selected—does it follow a specific rule or default setting?
    - **UV Rating**: Similarly, we're seeking guidance on how this rating is assigned.
    - **Color and Profile**: These details also come via email. Should they be extracted manually, or do you have another preferred approach?
- **Opportunity Owner**: Please confirm how this is assigned.
- **Account Name**: Please confirm how this is assigned.
- **Distributor Account**: Please confirm how this is assigned.
- **Contractor Account**: It appears the contractor's name is also provided in an email. Is there a preferred process for accessing this information?
- **Close Date**: We'll set this to a future date. If there's a particular timeframe or method, please confirm.
- **Stage**: Based on your current workflow, "Quote" seems to be used most frequently (90% of cases).
- **Probability**: Auto-filling to 50% when Stage field value is selected as "Quote". Is this correct?
- **Product Type**: Proposed value is Brava.

- **Install Address Fields**:
    - Install Street Address, City, State/Province (abbreviated), and Zip/Postal Code.

Quote Creation & Product Addition

After the Opportunity is created, a Quote will be generated. Below are the fields identified for the Quote, with proposed values where applicable.

Quote Fields

- **Sales Rep**: Proposed to mirror the Opportunity Owner. Is this acceptable?
- **Terms**: Proposed value is “Net 30 Terms”; please confirm if we need to select any other option in any other case.
- **Account Type**: There are three available options: Distributor, Contractor, and Retail. Proposed value is Distributor, please confirm.
- **Roof Area (sq)**: Proposed to capture the Total Roof Area Square without Waste.
- **Fire Rating**: Options are “Class A” and “Class C”, with “Class C” as the recommended default. Is this in line with your requirements?
- **Profile and Color**: These fields are noted as provided in the email. We’d like to confirm if you have a preferred method for integrating these values.
- **High UV and High Wind**: Proposed default is None for both; please confirm.

After submitting the initial entries in the Quote form, we will add a product, based on the total area required. The specific product will be chosen according to the job’s requirements, as Brava offers various products suited to different project types. Each product includes unique configurations that need to be defined.

For example, in the Quote video, Logan selected the “Brava Cedar Shake” product, which includes configurations such as:

- **Starter 2.0**
- **Hip Ridge (Low/Steep Slope)**
- **Solid Shingle Accessory (Rake/Valley)**

Each configuration requires two key values:

- **Waste Factor**: A percentage of additional material to account for cuts and adjustments, specific to each configuration.
- **Quantity (Linear Feet)**: Measurement in linear feet for elements like edges, ridges, and trims.

To ensure accuracy, we will need formulas to calculate Quantity (Linear Feet) tailored to each product based on provided Waste Factor and configuration. Could you please confirm or provide any specific formulas for these calculations?

We also noted that Logan has sheets used for calculating Ridge Cap and Hip Cap values. We'll need access to these sheets for reference.

There are additional fields that appear to be autofilled or modified during the Quote process. Please confirm the formulas or logic for the following:

- **Total Pallets**
- **Estimated Total Weight of Order (including Pallets)**
- **Freight**: This uses the Dedicated Truckload Calculator and includes:
    - Total miles (using Google maps)
    - Estimated Freight Cost
    - Number of trucks required
    - Standard Markup (20%)
    - Overall Total Cost

Quotation Process Overview

To finalize the quotation:

1. A **PDF** of the completed Quote form is generated and sent to the customer (We need email templates and signature if we are sending this quote from the backend).
2. We capture a **screenshot** of the final Quote values and upload it to the Opportunity in Salesforce.
3. Additionally, both the **Brava PDF report** and **Hover PDF report** are attached to the Opportunity.

Please confirm these details or provide any additional guidance on specific calculation methods or steps.

Phase 3: Roof Plan Drawing Conversion and Takeoff Replication

Overview

This phase aims to automate the process of converting roof plan drawings into detailed material takeoffs. The steps involved are:

1. **Initiating a Takeoff Request**:
    - When an Account Manager starts a takeoff request, our system sets up a webhook to get notified about status changes.
    - The backend uploads the architectural blueprints to Hover, which analyzes these drawings to create a detailed roof model and measurements. Hover typically takes about 24 hours to process the blueprints.
2. **Processing and Calculations**:
    - Once Hover completes the analysis, it notifies our backend through the webhook.
    - Our system retrieves the measurements and performs material calculations using formulas provided (as demonstrated in the reference video).
    - After calculations, the system generates documents: “Takeoff Legend” and “Takeoff Report,” summarizing the required materials and their details.
3. **Salesforce Integration and Review**:
    - The generated reports and calculated data are uploaded to Salesforce for the team to review.
    - This step allows the team to verify the accuracy of the takeoff and ensure everything aligns with expectations before communicating with the customer.
    - Upon approval, the team can manually send the quote to the customer or choose to automate this step from the backend.