

UAV Drone Marketing Decisions

Explanations – Cause-Effect Relationships – Suggestions and Tips

The six drone marketing decisions (along with your company's P/Q rating for drones and number of drone models offered, both of which are determined by your management team's entries on the Product Design page) will largely determine the degree to which your company's drones are competitive with the drones of rival companies in this decision round.

Each time you enter a new decision on this page, the calculations in the Market Segment Statistics section and in the Price-Cost-Profit Breakdown section will instantly show the **projected** effects, by geographic region, on unit sales, market share, revenues, unit operating costs, operating profit, and operating profit margin, as well as updated **projections** of overall company performance (in the box with the blue background on the middle-left of the page). **All of these on-screen calculations are there to help you evaluate the relative merits of one decision entry versus another.** As always, no decision entry is "final" until the decision round deadline passes, so you can experiment with many different entries in the marketing-related decision fields in searching for a "winning" marketing strategy and combinations of marketing-related decision entries that offer the "best" or "most attractive" *projected outcomes* across the four geographic regions.

Use the links below to quickly access the topic on which you want explanations, guidance, and suggestions.

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Competitive Factors Affecting UAV Drone Sales/Market Share

The top section of this page shows 8 of the **competition-related factors that combine to determine the buyer appeal and overall strength of your company's competitive efforts to compete successfully against the UAV drone offerings of rival companies** and thereby win an attractively profitable sales volume and market share in each region.

- Your company's **P/Q rating** and **number of models** are determined by decision entries on the Product Design decision page. Both can be increased or decreased, should you wish to make changes, by returning to the Product Design page and making the desired adjustments.
- Your company's **brand reputation**, the 9th relevant competitive factor, was determined by outcomes at the end of the prior year and, thus, is a given. You can see how your company's brand reputation compares against the brand reputations of rivals (and thus whether your company has a brand reputation-based

competitive advantage or disadvantage on this competitive factor in the upcoming year) by consulting the image rating data on p. 3 of the most recent *Camera & Drone Journal*.

- The six UAV drone marketing decision entries for each region on this page combine to determine the overall competitive strength of your company's marketing efforts vis-à-vis those of rival companies and thus will have a significant positive/negative impact on your company's drone sales and market share in each region.

Tip #1: Experiment with different combinations of the UAV drone marketing entries and try to discover a combination with the most appealing performance projections. If the most appealing combination in one or more regions entails a projected shortfall of drones assembled (see the Compensation and Facilities screen), then you can increase assembly capabilities or curtail your competitive efforts.

Tip #2: The first time you visit the UAV Drone Marketing decision page, the entries you see in the Competitive Assumptions section at the bottom of the page represent the **prior-year** regional average competitive efforts of all companies. These prior-year competitive efforts in the Competitive Assumptions boxes for each region, along with your company's entries on this screen, are used to generate the projections of units sold, market share, operating profits, and operating profit for each region, plus the overall company performance projections in the box under the Decisions/Reports menu. But **using the prior-year regional averages to calculate these projections is problematic because rival companies are virtually certain to make changes in their competitive efforts as they prepare their decisions for the upcoming year.**

Beware of putting much faith in projections partly based on backward-looking prior-year industry averages of the competitive efforts of all the various companies in the industry when, in truth, it is highly probable that, on average, rival companies will make some kind of upward/downward changes in their competitive efforts in each region. In other words, the nature and strength of the competitive efforts your company will face from rival drone-makers in the current or upcoming year is likely going to differ from the previous year.

Recommendation: Consider updating the Competitive Assumptions entries at the bottom of this screen before you start making your entries for the six UAV drone marketing decisions for the upcoming year because any updates will most definitely impact all of the projected outcomes on this screen. Thoughtful, analysis-based updates will make the resulting on-screen projections more "forward-looking" or "credible" or "reliable" than "backward-looking" projections based on "out-of-date" prior-year industry averages. See the Competitive Assumptions section of this Help document for guidance in making the updates.

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UAV Drone Marketing Decisions

Pricing Decisions. You have the flexibility to set different direct-sale prices at each of your company's regional website. There are several reasons to charge different prices in different regions:

1. Because competitive conditions and maneuvering of rivals (with regard to their website prices or other competitive factors) are different from region to region.
2. Because the buyers of drones in Latin America and the Asia-Pacific regions are *more* sensitive to cross-brand price differences than are drone buyers in North America and Europe-Africa.
3. Because you wish to stake out different market positions in each region and pursue different strategies for competing in each region.
4. Because import duties are not the same for all regions.
5. Because exchange rate adjustments vary from region to region.

Alternatively, you have complete discretion to pursue a mostly global pricing strategy and charge identical or much the same direct-sale retail prices in each region—your company always markets the same models having the same P/Q ratings and the same production/assembly costs in all four geographic regions of the world (although other marketing-related costs, as well as the competitive efforts of rivals, typically vary by region).

Tip: Before deciding what direct-sale website prices to enter, always consult the 4-page Comparative Competitive Efforts section of the most recent Competitive Intelligence Report to see how your company's prior-year prices compare to those of rivals region by region, and whether your company had a price-based competitive advantage or disadvantage. The bigger the percentage size of any price-based competitive advantage/disadvantage in a region, the bigger the positive/negative impact on your company's regional drone sales/market share. These competitive advantages or disadvantages, along with your entries of the anticipated industry averages in each region (see the "price to retailers" in the Competitive Assumptions section at the bottom of the page), should provide helpful guidance in arriving at what direct sale price to enter for each region. Use the info in the Comparative Competitive Efforts report to guide your entries for the other marketing decisions as well.

How the direct-sale website price of your company's camera-equipped drones compare to the industry average direct-sale price in each region has a major bearing on your company's unit sales and market share in that region. A large percentage price-based competitive disadvantage in one or more regions should automatically trigger *strong consideration of corrective action*—to at least narrow the disadvantage, if not eliminate it altogether. *You can see the projected effect on unit sales and market share in a region of a change in the direct-sale price to online buyers by watching how much projected unit sales and market share change (see the Market Segment Statistics section just below the marketing decision entries) when you enter a higher or lower price.*

Each time you make alternative decision entries for the direct-sale website price, use the resulting changes in the on-page calculations to help zero in on what you consider to be, at least temporarily, an "optimal" or at least "acceptable" decision entry for price, region-by-region. After you enter the other marketing decisions, you can always come back to the decision entry for price in a particular region and make further adjustments. Expect to recycle through the marketing decision entries for each region several times to arrival at what appears to be the most "optimal" combination of the six marketing entries.

While lower website prices tend to boost unit sales/market shares (assuming you do not undercut the effects of a lower price by reducing your company's competitiveness in other areas), lower prices can narrow operating profit margins and lead to a decline in total profit (because the gain in revenue attributable to a higher unit volume is insufficient to overcome the revenue erosion associated with a lower price on all units sold). So as you experiment with different website price entries, while the effects on projected unit sales/market share for the region are certainly relevant, you should *always* check out the resulting projected effects on (1) a region's operating profit and operating profit margin and (2) overall company performance.

Note: Bear in mind, as you make entries for retail prices (and the other marketing factors on this page) and evaluate all the revenue-cost-profit projections, that the projections for unit sales, revenues, market share, and profit on this page will change (perhaps drastically) if you should later return to the product design page and make changes in the decision entries that alter (1) the company's P/Q rating for drones and/or (2) the number of drone models offered (both of which are drivers of unit sales and market share) and/or (3) unit costs (which, along with prices, also affect profitability).

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Discount Offered to 3rd-Party Online Retailers. Decisions on what discount off the company's regular direct-sale price to offer 3rd-party online retailers have to be made for each geographic region. You have complete discretion on whether to offer the same percentage discount in each region or to offer different discounts in different regions.

The size of the percentage discount is really the *crucial inducement* to securing the commitment of 3rd-party online retailers to market a company's drones—the higher the discount, the more drones they will sell. Understandably, third-party online retailers have *zero interest* in buying a drone-maker's models at the same price the drone-maker is charging drone shoppers at its website, then marking the purchase price up by some percentage (say 10% or more to cover their own costs and allow for an attractive profit) and trying to secure orders at prices (10% or more) above a drone maker's website prices. Hence, a drone-maker wanting to gain wider buyer access and additional sales volume via the merchandising efforts of 3rd-party online retailers can do so primarily by offering to sell its drones to these online retailers *at an attractively large percentage discount off its own website price*. **The bigger the amount by which a drone-maker's percentage discount offer exceeds a region's industry average in this decision round, the bigger the positive impact on its regional drones sales and market share and the bigger the number of 3rd-party online retailers it will attract in the next decision round to sell its brand of drones in that region.** The advantage to a drone-maker of having more 3rd-party online retailers selling its drones than rivals have is enhanced ability to grow its sales volume and market share in the region.

To help decide what percentage discount to offer 3rd-party online retailers, consult the most recent Comparative Competitive Efforts section of the most recent Competitive Intelligence Report to see how your company's prior-year discount compared against those of rivals region by region and the resulting discount-based competitive advantage or disadvantage which your company had. A large percentage discount-based competitive disadvantage in one or more regions should automatically trigger *strong consideration of corrective action*—to at least narrow the disadvantage, if not eliminate it altogether. These percentage sizes of the discount-based competitive advantages and disadvantages, along with your entries of the anticipated upcoming year industry averages for the percentage discount in each region, will help you evaluate different size discounts and arrive at a percentage discount entry that is projected to generate both attractive unit sales/market share and attractive operating profits/operating profit margins in each region.

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Website Product Display/Info. The timeliness, creativity, and effectiveness of the product displays, informational content, and customer reviews at each company's website for drone sales, along with the website's visual appeal and functionality, is an important element in facilitating buyer purchases. When prospective drone buyers visit the company's website, they expect to see displays of all the various drone models, along with ample and useful information about each model's features, capabilities, and specifications. Many drone shoppers make a point of visiting the websites of several drone-makers to compare the features, capabilities, and specifications of their drone models and to read buyer reviews. And they expect to (1) be able to easily place orders and pay for their purchase via credit card or wire transfer, (2) obtain good after-the-sale product support, and (3) be able to use a chat function to pose questions to online personnel.

As should be the case for all the marketing decision entries, consult the 4 pages of the most recent Comparative Competitive Efforts report to see how your company's prior-year expenditures for website product displays/info compared against those of rivals region by region and the resulting website display-based competitive advantages or disadvantages. A large percentage display/info-based competitive disadvantage in one or more regions should automatically trigger *strong consideration of corrective action*—to at least narrow the disadvantage, if not eliminate it altogether. The percentage sizes of the competitive advantages or disadvantages, along with your entries of the anticipated upcoming-year industry averages of website product displays/info expenditures in each region and the on-page projections of alternative decision entries for website display expenditures, should help you zero in on a decision entry you are comfortable with.

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Search Engine Advertising. Spending different amounts on search engine advertising in different regions is normal because (1) unit sales differ widely by region, (2) industry-average expenditures for search engine advertising can vary considerable from region-to-region, and (3) there may reasons your company's

management team wants to put more/less emphasis on using search engine advertising in certain regions as a means achieving “acceptable” sales/market share and other performance outcomes.

Consult the most recent Comparative Competitive Efforts report to see how your company’s prior-year search engine advertising expenditures compared against those of rivals, region by region. If your company's search engine advertising expenditure in a region exceeds the industry average, then your company enjoyed a competitive edge over rivals on advertising in that region—a condition that positively impacts unit drone sales and market share. If your company's search engine advertising expenditures were below the industry-average in a geographic region, then your company’s advertising-based competitive disadvantage negatively impacted drone sales and market share in the region. The bigger the percentage size of the advertising-based competitive advantage or disadvantage in a region, the bigger the resulting positive/negative impact on regional drone sales and market share. A large percentage search engine advertising-based competitive disadvantage in one or more regions in the prior year should automatically trigger *strong consideration of corrective action*—to at least narrow the disadvantage, if not eliminate it altogether. result in selling fewer drones than would be the case at above-average advertising levels. The prior-year competitive advantages or disadvantages, along with your Competitive Assumptions about regional-average search engine advertising in the upcoming year, should provide adequate guidance for helping arrive at how much to spend on search engine advertising in each region.

It is very risky to arbitrarily decide to spend only so many dollars if rival companies are spending double or triple your amounts (unless you expect have competitive advantages over rivals on other competitive factors to offset being outcompeted on this factor). But this does not mean that you have to be drawn into a contest with rivals on who-can-outspend-whom on search engine advertising—rather it means you have to be alert to the effect of search engine advertising expenditures on your company's overall competitiveness against rivals.

Furthermore, it is critical that you understand *there is no set value of how many more drones your company can expect to sell in the North American market if spending for search engine ads is increased, for example, by \$1 million annually*. There is no pre-determined value (say, 6,000 drones) that has been programmed into GLO-BUS specifying that if a company increases its advertising by \$1 million annually then its drone sales will rise by x units. Rather, the size of the impact of a \$1 million increase in ad spending "all depends" on the actions of competitors.

Suppose, *all other things remaining equal*, your company increases its spending for search engine ads in the North American market by \$1 million and your rivals change none of their prior year's decisions. Then, indeed, your company's unit sales will rise by, say, x units (based on algorithms contained in the GLO-BUS software). But, if in the same year when your company increases advertising by \$1 million, several rivals decide to raise their advertising by \$500,000 (all other competitive factors remaining the same), then your company's sales will rise by a lesser amount, say, only y units. And, should **all** rivals elect to boost their advertising in North America by \$2 million (all other things remaining equal), your company's \$1 million advertising increase would be accompanied by a *decline* in unit sales (albeit a smaller decline than if you had failed to increase advertising at all). So, just how many extra units your company will sell as a result of increasing advertising by \$1 million "all depends" on the full range of competitive efforts of rivals and this includes actions not only with respect to their expenditures for search engine advertising but also with respect to price, number of models, length of warranties, and so on. The "Well, it all depends" answer also applies to the impacts on unit sales and market share for *all other moves* you and your co-mangers might make—raising/lowering prices, adding/deleting models, lengthening/shortening warranties, increasing/decreasing the P/Q rating, and so forth.

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Recruitment/Support of 3rd-Party Online Retailers. Expenditures for recruiting/supporting 3rd-party online retailers cover the costs of calling on prospective online retailers to (1) personally communicate the expected rapid growth of the UAV drone market, the advantages of a company’s drone models, and the R&D effort the company is making to improve future models of its drones, (2) build a relationship with these prospects via a face-to-face visit, and (3) explain the kinds and amount of merchandising support the company provides. This

support includes providing periodically-refreshed pictures of the company's various drone models, supplying comprehensive and up-to-date information about each model, and engaging in collaborative efforts to service buyer requests for various kinds of after-the-sale product support (filing warranty claims, downloading product manuals, obtaining software updates and useful apps, and so on).

Such expenditures definitely help secure the commitment of 3rd-party online retailers in a region to stock and merchandise a company's drone models, but they are considerably less important than the size of the percentage discounts off a company's own direct-sale website price that is offered to the region's 3rd party online retailers.

As is the case with other competitive factors, if your company's expenditures for recruiting/supporting 3rd-party online retailers exceed the industry average amount in a given geographic region, then your company will enjoy a competitive edge over rivals on this particular competitive factor in that region. If your company's expenditures for recruiting/supporting 3rd-party online retailers are below the industry average in a geographic region, then your company is at a competitive disadvantage on this competitive factor and will sell fewer units than would be the case at higher expenditure levels.

Again, make it a point to consult the most recent Competitive Intelligence Report to see how your company's prior-year expenditures for recruiting/supporting 3rd-party online retailers compared against the expenditures of rivals region by region. These comparisons, together with your competitive assumption entries (in the bottom section of the page) of the *anticipated* upcoming-year industry average expenditure for recruiting/supporting 3rd-party online retailers and the on-page calculations for alternative decision entries for expenditures for recruiting/supporting 3rd-party online retailers, should help your management team decide how much to spend.

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Warranty Period Decisions. Drone warranties cover only the built-in action camera, the GPS, and the flight controller; the warranty specifically excludes coverage of damage to the drone itself stemming from pilot error or crashing into an obstacle. Lengthening the warranty period for camera-equipped commercial drones, while making your drone models more appealing to buyers, also has the effect of boosting warranty repair costs because (1) offering buyers a longer warranty tends to boost unit sales volume (thus exposing the company to greater risk of malfunction or a defective part in the camera, the GPS, or the flight controller) and (2) a longer warranty period translates into a greater number of warranty claims due to the added time the company is exposed to risk of a parts failure or malfunction in the camera, the GPS, and the flight controller. *Different warranty periods can be offered in different geographic regions.*

- The expected warranty claim percentage and the projected warranty repair costs associated with whatever length of the warranty period is entered are shown just under the warranty period decision field. *The cost of handling a warranty claim for drones is \$300 per claim.*
- The percentage of expected warranty claims declines as your company's P/Q rating for drones rises. (Your company's management team can also opt to reduce the warranty claim percentage by increasing the size of the "assembly quality incentive" paid to drone PATs—this means of cutting warranty claim costs is discussed in the Help section for the Compensation, Training, and Product Assembly Decision page.)
- As you can see from making different entries for the warranty period and observing the on-page projections for warranty claim costs, longer warranty periods can increase future warranty costs significantly. Keep in mind that projected warranty claims repair costs are indeed projections, since the actual number of drones sold can turn out to be higher/lower than projected in the likely event that the competitive efforts of rivals are weaker/stronger than anticipated.

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Halting Drone Sales in a Region. If, for whatever reason, you want to withdraw entirely from selling drones in a particular geographic region for one or perhaps more decision rounds, just enter the region's price as \$0. Then also eliminate the dollar expenditures for website product displays/info, search engine advertising, and retailer recruitment/support in that region (in order to avoid paying costs for these items when you are not striving to secure buyers and thus have no sales in the region). You can reenter a region and resume sales whenever you wish.

Market Segment Statistics

Drone Demand (Unit Sales) and Market Share. The first portion of the Market Segment Statistics section for Drones display how prior-year actual unit demand and market share compare against the **projected** unit demand and market share for the upcoming year, region by region, with unit sales broken out by sales at the company's website and sales by 3rd-party online retailers. As has been emphasized above, keep in mind that the upcoming-year projections are based on (1) the entries currently showing in the drone-related marketing decision boxes (and entries on all the other decision pages) and (2) the *prior-year* competitive efforts of rival companies, as measured by the prior-year industry averages for selling prices, P/Q ratings, search engine advertising, warranties, and so on. The amounts by which the projected unit sales and market share for drones turn out to be different from the actual outcomes depends upon the extent to which the upcoming year industry averages for the various competitive factors for drones in each geographic region turn out to be about the same, a little higher/lower, somewhat higher/lower, or much higher/lower than the prior-year averages.

Number of 3rd-Party Online Retailers. The last line of this section shows the number of 3rd-party online retailers in each region that stocked and displayed your brand of drones in the prior year and the for the current year. ***There is nothing you can do in the current year to attract additional online retailers for the current year because their decisions of which drone brands to market were made at the end of the prior year.*** In the last two months of each year, 3rd-party online retailers decide whether to stick with the drone brands they are currently displaying and marketing on their websites or whether to make some adjustments based on (1) the percentage discount drone-makers are currently offering to 3rd-party online retailers and (2) growing popularity of some brands of drones and declining popularity of other brands. The number of retailers who decide to display and market your drones this upcoming year make their decisions at the end of the prior-year.

What 3rd-Party Retailers Consider in Deciding Which Brands to Merchandise. The number of online retailers in a region that decide to display and market your company's brand of drones *in the following year* is determined by four factors:

1. Your brand's share of drone sales this upcoming year in that region. Other things being equal, 3rd-party online retailers are more attracted to high-share brands than low-share brands because of their greater sales potential.
2. Your company's P/Q rating for drones this upcoming year. Other things being equal, online retailers are more attracted to merchandise drone brands with high P/Q ratings as opposed to brands with low P/Q ratings.
3. The extent to which the percentage discount off regular price your company offers to third-party online retailers in a region is above/below the average percentage discount offered by all drone-makers in the region. Drone-makers offering "high" or above-average percentage discounts as opposed to relatively small or below-average discounts typically have *strong* ability to attract greater numbers of 3rd-party online retailers.
4. How much your company spends this upcoming year to recruit more 3rd-party online retailers and to support their marketing efforts in each region as compared to the regional average of all drone-makers. Obviously, 3rd-party retailers consider relatively strong marketing and merchandising support as a positive factor, but this factor is typically not as important as the other three factors.

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Price-Cost-Profit Breakdown

The Price-Cost-Profit Breakdown section contains two columns of data for each region: the first column shows price-cost-profit *projections* of drone sales made to customers at the company's website; the second column shows the company's price-cost-profit *projections* on the sales of the company's drones made by 3rd-party online retailers.

Selling Price — The number in the first column corresponds exactly to the price entered in the decision box for average retail price at the top of the page. The selling price number for 3rd-party retailers in the second column is equal to the net price the company receives on the drones it sells to 3rd-party retailers—it is always equal to the average retail price of the company's drone models in the region adjusted downward for the percentage discount at which the company sells its drones to 3rd-party retailers (the size of this percentage discount is, of course, the number entered in the decision box labeled "discount offered to 3rd-party retailers").

Exchange Rate Adjustment — The size and direction of the exchange rate adjustment for each region typically varies from region to region in accordance with whatever real-world exchange rate fluctuations occurred between the beginning of the prior-year decision round and the beginning of this upcoming year's decision round.

- *The company's sales prices for drones sold at its North American website and to 3rd-party online retailers in North America are adjusted up or down for exchange rate changes between the U.S. dollar and the Taiwan dollar.*
- *The company's sales prices for drones sold at its Europe-Africa website and to 3rd-party online retailers in Europe-Africa are adjusted up or down for exchange rate changes between the euro and the Taiwan dollar.*
- *The company's sales prices for drones sold at its Asia-Pacific website and to 3rd-party online retailers in the Asia-Pacific are adjusted up or down for exchange rate changes between the Singapore dollar and the Taiwan dollar.*
- *The company's sales prices for drones sold at its Latin America website and to 3rd-party online retailers in Latin America are adjusted up or down for exchange rate changes between the Brazilian real and the Taiwan dollar.*

Remember that the sizes of the exchange rate adjustment each year are always equal to 5 times the actual period-to-period percentage change in the real-world exchange rates for US\$, €, Brazilian real, Sing\$, and Taiwan\$ (multiplying the actual % change by 5 is done so as to translate exchange rate changes over the few days between decision periods into changes that are more representative of a potential full-year change). However, because actual exchange rate fluctuations are occasionally quite volatile over a several-day period, the maximum exchange rate adjustment during any one period is capped at $\pm 20\%$ (even though bigger changes over a 12-month period are fairly common in the real world). The GLO-BUS system accesses all the relevant real-world exchange rates and does all the pertinent calculations, thus relieving you and your co-managers from mastering the intricacies of the exchange rate adjustments.

Special Note — *Options for Dealing with Favorable/Unfavorable Exchange Rate Adjustments.* While you do not have to worry with the mechanics of calculating exchange rate adjustments, you do need to concern yourself with what actions, if any, to take to mitigate the unfavorable/negative exchange rate impacts and to capitalize on the favorable/positive exchange rate adjustments shown on the decision page. *There are several ways to counter the adverse effects of unfavorable (those with a minus sign) exchange rate adjustments.* One option is to adjust sales and marketing efforts in a manner that results in (1) added sales in those areas where the exchange rate adjustments are positive (favorable) and (2) somewhat smaller sales in the regions where the exchange rate adjustments are negative (unfavorable). Another option is to raise the selling prices in a particular region to help offset negative revenue adjustments and realize higher net revenue per drone sold. Because all competing companies have assembly facilities in Taiwan and are thus subject to much the same

favorable/unfavorable exchange rate impacts on net revenues per drone sold, you may be able to make offsetting price adjustments without much risk of putting your company at a price disadvantage.

Net Revenue Per Unit — Net revenue per unit, in effect, is the actual revenue in U.S. dollars that the company can expect to receive on each drone *projected* to be sold in the region (at the company's website or by 3rd-party online retailers), after taking into account the effects of the relevant exchange rate changes.

Cost of Units Assembled — the \$/Unit number is calculated by dividing the *projected* total production costs of the drones that will need to be assembled and shipped to retailers in the region by the number of drones *projected* to be sold in the region (see the number for "Total Unit Demand" in the Marketing Statistics section).

Delivery Costs — the \$/Unit number represents the costs per drone sold that will be incurred for:

- Shipping (\$60 per drone sold to online customers at the company's website and \$10 per drone sold to 3rd-party retailers in all regions).
- Applicable import duties.

Applicable import duties *in the case of direct sales to online customers in each region* are currently \$0 for North America (because North American countries currently do not impose duties on imports of drones), 4% of the average retail price to online customers in Europe-Africa, and 6% of the average retail price to online customers in both Latin America and the Asia-Pacific.

Applicable import duties *in the case of sales to 3-party online retailers in each region* are currently \$0 for North America (because North American countries currently do not impose duties on imports of drones), 4% of the price at which 3rd-party online retailers in Europe-Africa purchase drones from the company, 6% of the price at which 3rd-party online retailers in the Asia-Pacific purchase drones from the company, and 6% of the price at which 3rd-party online retailers in Latin America purchase drones from the company.

The price at which 3rd-party online retailers in a region purchase drones from the company equals the company's average retail price to online-customers in that region (the number you have entered in the decision box for "Average Retail Price to Online Customers" at the top of the page) less the percentage discount the company offers to 3rd-party online retailers in the region (see the percentage appearing in the decision box labeled "Discount Offered to 3rd-Party Online Retailers"); these prices are shown in the Price-Cost-Profit Breakdown section on the line labeled "Selling Price."

Both shipping costs and import duties are subject to change by your instructor (you will be notified of such changes).

Marketing costs — the \$/unit number *for direct sales to online customers in each region* equals the costs appearing in the decision boxes for website product displays/info and search engine advertising in each region plus the projected warranty costs associated with the warranty period in the decision box for each region *divided by* the projected number of drones to be sold to online customers in the region.

The \$/unit number for marketing costs *for sales made by 3rd-party online retailers in each region* equals the number in the decision box for retailer recruitment/support divided by the projected sales of 3rd-party online retailers merchandising the company's drone brand in each region (this is the same number showing just under the decision box for "Retailer Recruitment /Support Budget" in each geographic region).

Administrative Expenses —the company's drone-related administrative expenses are allocated to each region based on that region's *projected* percentage of the total number of drones sold worldwide. The drone-related administrative expenses for each region are then allocated between direct online sales and sales by 3rd-party online retailers according to their respective *projected* share of drone sales within each region. The \$/Unit number is calculated by dividing the total amount of the company's drone-related administrative expenses allocated to each region/distribution channel by the *projected* number of drones to be sold in each

region/distribution channel. This generally accepted accounting procedure for allocating a fixed company-level expense to different market segments results in the same administrative cost per drone sold in all four regions and in both distribution channels (direct sales and sales through 3rd-party online retailers) within regions.

Total Operating Cost — the two \$/Unit numbers equal net revenues per unit less all projected operating expenses per drone sold (cost of units assembled, delivery costs, marketing costs, and administrative costs). Interest payments and taxes are not part of operating expenses, as per general accounting principles.

Operating Profit — the two \$/unit numbers for projected operating profit are calculated by subtracting projected total operating cost per drone sold (at the company's website or by 3rd-party online retailers) from projected net revenues per drone sold (by either the company at its website or by 3rd-party online retailers). It is normal for the operating profit on drones sold direct to customers at the company's website to be greater than for drones it sells to 3rd-party online retailers because the company's selling price to online customers is higher than the price at which it sells to 3rd-party online retailers.

Operating Profit Margin — the two *projected* percentages for operating profit margin equal *projected* operating profit per drone sold (at the company's website or by 3rd-party online retailers) divided by the *projected* net revenue per drone sold (from sales to online customers or sales to 3rd-party retailers).

Projected negative operating profits per drone sold and the associated projected negative operating profit margins in any region are red flags that company managers should address/correct immediately. The same can be said of operating profits per drone sold and operating profit margins that, while positive, are nonetheless "too small" to produce attractive profitability.

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Competitive Assumptions

The role of the Competitive Assumptions is to provide you with a means of improving the accuracy of the projections of your company's drone sales, market shares, and operating profits in each region, as well as the seven projections of your company's overall performance in the box under the Decisions/Reports menu. You should be wary of performance projections that are based on the backward-looking prior-year regional average levels of competitive efforts when the regional-average levels of competitive effort in the current year will most probably differ from those in the prior-year.

There are multiple reasons to expect that the competitive efforts of rivals will, on average, not just be different from prior-year levels of competitive effort but will be somewhat stronger than the prior year:

1. Poorly-performing companies that were outcompeted last year have strong incentive to strengthen their competitive efforts (particularly those where they suffered from competitive disadvantages).
2. High-performing rivals may well try to open up a wider competitive advantage on certain competitive factors to further enhance their prior-year's performance.
3. Companies that were surprised by unexpectedly strong competitive efforts by one or more of their close rivals and, as a consequence, suffered a loss of drone sales and market share in one or more regions, may well retaliate with much strengthened competitive efforts of their own to recapture their former market share(s)—or even increase them.
4. Ambitious companies, intent on overtaking the industry leader, might well opt to boost their competitive efforts on one or two competitive factors by significant amounts and thus achieve a big competitive advantage that they hope will propel them into an industry-leading position.

5. Some (most?) companies are likely to try to enhance their drone sales and market shares in those particular regions where their sales/market share performance was weakest and/or where their operating profits were lowest.
6. Industry-leading companies have a strong incentive to strengthen their own competitive efforts—they will not remain industry leaders for long by sticking with status quo competitive efforts across the board. It is not farfetched for an industry leader to boost its competitive efforts on a competitive factor where they have had a big competitive advantage—and thus try to widen their competitive advantage over rivals.
7. All firms have an incentive to adjust their competitive efforts in one or more regions to improve their company's overall performance and thereby meet or beat the periodic and sometimes annual increases in the investor-expected performance targets.

A good argument can be made, therefore, that company managers should expect competition to intensify in the drone segment in the current/upcoming year and in later years, thus resulting in higher regional-average levels of competitive effort in at least some, perhaps many, of the competitive factors governing regional sales and market shares. After all, if you are considering making different marketing decision entries (or increasing/decreasing the P/Q rating of your drones or changing the number of models offered) to improve your company's profitability and performance, then the co-managers of most other rival companies are also likely to be considering how to alter the makeup of their competitive efforts in order to improve their company's profitability and performance.

Updating the Competitive Assumptions. Adjusting the regional averages definitely involves much speculation and guesswork in Year 6 because there is no track record to go on in judging what rival companies, on average, will do differently. It is a bit easier in Year 7 to make updates because you at least know how much the regional averages changed from Year 5 to Year 6 (see the 4-page Regional-Average Competitive Efforts selection on the Competitive Intelligence Report menu). Updating gets a bit easier still headed into Year 8 because you have two years of history about the changes in the regional averages. As a rule, as you become more familiar with strategies and competitive maneuvering of rival companies and as the historical record of changes in the regional averages becomes larger (as reported in the Regional-Average Competitive Efforts selection on the Competitive Intelligence Report menu), the task of updating the regional-average competitive assumptions can be done quicker and usually with greater accuracy.

Beginning with Year 7 and every year thereafter, make it a point to ***review the year-to-year historical changes in the Regional Average Competitive Efforts report in the Competitive Intelligence Reports menu to see the trends in how each of the regional average competitive factors have changed for all years/decision rounds to date.*** Make a printout of all four pages to have at your fingertips when you start to update the prior-year regional averages for both AC cameras and UAV drones. But be alert to the fact that historical trends should not be relied on 100% relied on for anticipating the actions of competitors—historical trends may or may not be a reliable basis for projecting the future actions of rival companies.

For your updates to have a forward-looking element, you need to consult the information in the Comparative Competitive Efforts section of the most recent Competitive Intelligence Report and specifically try to identify which companies are likely to make changes in which competitive efforts.

- Check out the competitive factors where poorly-performing were at a big competitive disadvantage against the industry average, region-by-region. Poorly-performing companies (easily identified by their low scores on the five performance measures on pp. 2-3 of the Industry Scoreboard in the Camera & Drone Journal) have a big incentive to correct (or at least narrow) their big competitive disadvantages and boost their overall competitive efforts by enough to improve their company's profitability and meet/beat the five investor-expected performance targets.

- Check out which other rivals were also burdened by one or more competitive disadvantages that give them good reason to *consider* at least narrowing and maybe totally eliminating some (many? or all?) of these disadvantages on the various competitive factors in all four regions. Do you see any reason to suspect that several companies may try to turn one or more of these former competitive disadvantages into competitive advantages. You are urged to use the *Time Series Competitive Efforts* report on the Competitive Intelligence Report menu to easily track the competitive maneuvering of an industry leader or close rival or any other company of interest for all years completed to date to try to anticipate what moves a company may make in the upcoming year.

Thoughtful analysis of the information on the four pages of the most recent Comparative Competitive Efforts report, used in conjunction with the year-to-year changes in the regional-average competitive factors, will help you decide how much to raise/lower (or leave unchanged) the prior-year industry averages. *On balance, you should usually find reasons to expect that competition will intensify somewhat in the upcoming years as all companies undertake efforts of one kind or another to improve their profitability and overall performance.*

Recommendation #1: Probably the safest or most conservative assumption about the prior-year averages is that the overall competitive efforts of rivals will, on average, be "a little stronger" or "slightly stronger." This does not automatically mean that the regional averages of all 8 of the competitive factors will change in ways that produce stronger competition. Slightly stronger competition could mean adjusting the prior-year industry averages downward in the case of the direct-sale website price by, say, \$20 to \$100+, up by 0.2% to 0.5% in the case of the discount to 3rd party online retailers, upward by 0.1 to 0.3 in the case of P/Q rating and number of models, and perhaps \$100 to \$250 in the cases of search engine advertising and website expenditures, perhaps \$2.50 to \$5.00 for retailer recruitment, and maybe as much as a 30-day jump in the warranty period in Years 6-8 because some companies are likely to boost the length of the warranties to 90 days or 120 days or even to 180 days (but changes are likely to drop to the 5 to 15-day range in later years as fewer companies make warranty period changes). **Be cautious about adjusting the regional industry averages up or down by "large" percentage amounts.** "Big year-to-year changes" in the industry averages occur infrequently, mainly because all rivals are unlikely to make competitive changes in the same direction.

- However, in Years 8-12, should a price war break out or if several drone-makers aggressively step up their marketing efforts for search engine advertising, website displays, retailer recruitment/support, and/or length of warranties to win bigger sales/market share in a region, then "somewhat bigger" adjustments in some/many of the regional averages may be appropriate.
- On the other hand, if competition in the prior year or two has been especially brutal, such that drone profit margins across the industry have plunged, there may be reason to assume some/many companies will *not* further intensify their aggressive and costly marketing efforts to pursue "profitless" gains in unit sales and market shares, in which case you may leave many of the prior-year industry averages unchanged (or possibly even assume that a few companies will cut back on certain competitive efforts, like low direct-sale prices, boosts in P/Q ratings, search engine advertising or website displays or warranties, in an attempt to trim losses/restore profitability.

Recommendation #2: Try out graduated adjustments in the Competitive Assumptions (most especially for direct-sale website price, P/Q rating, number of models, and warranty period because they are such important competitive factors) and observe the different impacts on the on-screen projections. Then see what changes in your own company's competitive efforts may be needed to counteract/defeat the potential changes in the competitive efforts (small or large) of rivals in order for your company to achieve the desired levels of company performance you are targeting. This will give you a better feel for what entries to make in the marketing decisions boxes and perhaps whether to return to Product Design page and make changes in the number of models offered and/or P/Q rating. *Achieving increased unit sales and market shares in an industry environment where competitive conditions are growing stronger will take a stronger competitive effort on your company's part (in the form of lower price, higher P/Q rating, more advertising, and so on) than if competitive intensity remains about the same or grows weaker.*

Tip: Slightly overestimating the amount by which the overall regional-average competitive efforts of rivals will grow stronger can often result in better performance outcomes for your company than underestimating how much the overall regional-average levels of competitive effort will rise in the current/upcoming year. This is because if competition is weaker than expected, your company will have stronger-than-projected demand for UAV drones and will actually end up with bigger sales/market shares than were projected, provided your company has sufficient idle workstation capacity to assemble and fill the unexpected orders from buyers. It is easy enough for your management team to make it standard practice in your drone assembly facility to always have several more installed workstations than needed to supply projected demand, just in case buyer demand in the upcoming year turns out to be higher than expected. On the other hand, if you *underestimate* the strength of rivals' competitive efforts, sales/market shares will turn out to be lower-than-expected and the company's overall performance will be worse than projected.

Consequently, when the results come out, it is far better to have the pleasant surprise of discovering your company actually sold more than the projected sales volume in one or more regions rather than experiencing the unpleasant surprise of learning that your company sold less than the projected sales volume because you and your co-managers underestimated the strength of the competitive efforts from rivals, and they captured some of the sales and market shares you were expecting to get. You can live happily with the good surprise of better-than-expected results, but the bad surprise of weaker-than-expected results is obviously something your company should try to avoid.

Also Remember: Improving the accuracy of the projections of upcoming-year performance by thoughtfully assessing what levels of competitive effort that rivals, on average, are likely to undertake in the upcoming year and using these assessments to update entries for the 8 competitive factors in the Competitive Assumptions section **has the added benefit of helping your company win score-boosting Bull's Eye awards (see page 3b of each year's Camera & Drone Journal).**

Is It “Absolutely Necessary” to “Update” the Prior-Year Regional Averages? The short answer is “no.” *How you run your company is your responsibility.* Just be sure you are content to accept and deal with whatever *inaccuracy may exist in the region-by-region projections of unit sales, market shares, unit costs, and operating profit* that are calculated on the basis of how your company's competitive efforts this upcoming year stack up against *last year's* overall competitive efforts of rival companies. So, if you don't want to take the time and trouble to develop your own reasoned judgments about the likely overall competitive efforts from rivals your company will face in this upcoming year), then you can most definitely skip the task of updating the values in the Competitive Assumptions boxes.

Important: How far off the on-screen projections of unit sales, market shares, unit costs, and operating profit will turn out to be from the actual results depends on the extent to which the *adjusted or unadjusted* values for Competitive Assumptions differ from the actual industry averages that appear in the upcoming year's Competitive Intelligence Reports—the smaller the differences, the closer the projections will be to the actual results; the bigger the differences (especially as concerns wholesale price and P/Q rating), the greater the projections will differ from actual results.

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More Details about the Exchange Rate Adjustments

As indicated above, exchange rate adjustments result from producing drones in Taiwan (where the local currency is Taiwan dollars) and selling them to buyers in other parts of the world (where local currencies are different). These adjustments stem from two things:

1. The orders, shipments, and payments for drones tend to occur on different dates, and currency exchange rates on these different dates are likely to be different.

2. The local currency payments of buyers have to be converted into Taiwan dollars and ultimately into U.S. dollars (since the company reports its financial statements in U.S. dollars).

Thus the company's business is one with potentially significant foreign exchange risks. To help manage these risks, company officials have negotiated a long-term currency exchange agreement with the Global Community Bank through which the company does most of its business; the agreement calls for the bank's foreign currency department to handle the company's many foreign currency transactions. The agreement is complex but the essence of the arrangement calls for the net revenues the company actually receives on drones assembled and shipped from the Taiwan assembly facility to buyers in various parts of the world to be subject to exchange rate fluctuations in four local currencies (the U.S. dollar, the euro, the Brazilian real, and the Singapore dollar) against the Taiwan dollar. For simplicity, both of the reasons for currency adjustments are combined into a single adjustment based on the real-world currency swings during the period from one decision round to the next as concerns the U.S. dollar against the Taiwan dollar, the euro against the Taiwan dollar, the Brazilian real against the Taiwan dollar, and the Singapore dollar against the Taiwan dollar). More specifically:

- *The net revenues received from sales to North American buyers are adjusted up or down for exchange rate changes between the U.S. dollar and the Taiwan dollar.* Should the exchange rate of U.S. dollars per Taiwanese dollar fall, say from 0.250 to 0.245 U.S. dollars per Taiwan dollar, then buyer payments of the agreed upon number of U.S. dollars per drone at the time the order was placed equate to more Taiwanese dollars at the time of payment and an *upward* (favorable) adjustment in the company's revenues. Conversely, when the exchange rate of U.S. dollars per Taiwanese dollar rises, say from 0.250 to 0.255 U.S. dollars per Taiwan dollar (meaning that a specified number of U.S. dollars equate to fewer Taiwanese dollars), then the company does not receive as many Taiwan dollars in payment for the drones sold and shipped to North American buyers and the revenue adjustment is *downward* (unfavorable).
- *The net revenues the company receives from sales to buyers in Europe-Africa are adjusted up or down for exchange rate changes between the euro and the Taiwan dollar.* Should the exchange rate of euros per Taiwanese dollar fall from one decision period to the next, say from 0.250 to 0.245 euros per Taiwan dollar, then buyer payments of the agreed upon number of euros per drone at the time the order was placed equate to more Taiwanese dollars at the time of payment and an *upward* (favorable) adjustment in the company's revenues. Conversely, when the exchange rate of euros per Taiwanese dollar rises, say from 0.250 to 0.255 euros per Taiwan dollar (meaning that a specified number of euros equate to fewer Taiwanese dollars), then the company does not receive as many Taiwan dollars in payment for the drones sold and shipped to Europe-Africa buyers and the revenue adjustment is *downward* (unfavorable).
- *The net revenues received from sales to Asia-Pacific buyers are adjusted up or down for exchange rate changes between the Singapore dollar and the Taiwan dollar.* Should the exchange rate of Singapore dollars per Taiwanese dollar fall say from 20.40 to 20.35 Singapore dollars per Taiwan dollar, then buyer payments of the agreed number of Singapore dollars per drone at the time the order was placed equate to more Taiwanese dollars at the time of payment and an *upward* (favorable) adjustment in the company's revenues. Conversely, when the exchange rate of Singapore dollars per Taiwanese dollar rises, say from 20.40 to 20.45 Singapore dollars per Taiwan dollar (meaning that a specified number of Singapore dollars equate to fewer Taiwanese dollars), then the company does not receive as many Taiwan dollars in payment for the cameras/drones sold and shipped to Asia-Pacific buyers and the revenue adjustment is *downward* (unfavorable).
- *The net revenues received from sales to Latin American buyers are adjusted up or down for exchange rate changes between the Taiwan dollar and the Brazilian real.* Should the exchange rate of Brazilian real per Taiwanese dollar fall, say from 10.65 to 10.60 real per Taiwan dollar, then buyer payments of the agreed upon number of Brazilian real per drone at the time the order was placed equate to *more* Taiwanese dollars at the time of payment and an *upward* (favorable) adjustment in the company's revenues. Conversely, when the exchange rate of real per Taiwanese

dollar rises, say from 10.65 to 10.70 real per Taiwan dollar (meaning that a specified number of Brazilian real equate to fewer Taiwanese dollars), then the company does not receive as many Taiwan dollars in payment for the drones sold and shipped to Latin American buyers and the revenue adjustment is *downward* (unfavorable).

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