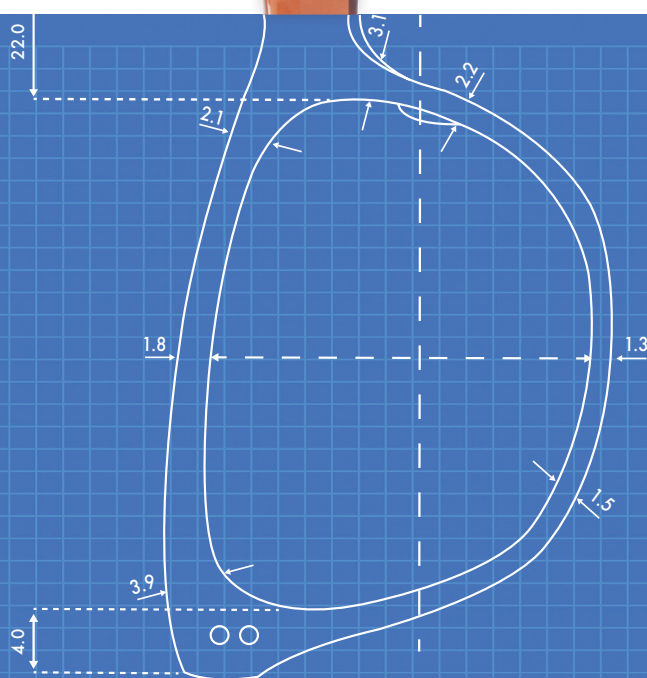




FRAMEWORKS

ALL GLASSES
ARE NOT
CREATED EQUAL



BY DEIRDRE CARROLL / SENIOR EDITOR

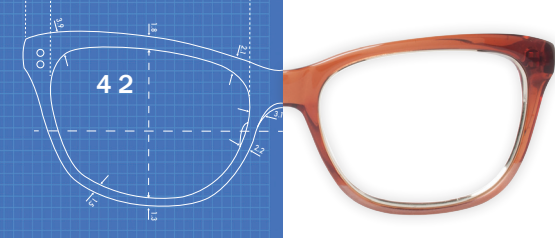
NEW YORK—All eyeglasses are not created equal. Despite what some evening news programs or clever, upstart internet outfits might have the consumer believe. The production steps, materials, details and costs that go into the construction, distribution and marketing of frames, all factor into the price the customer sees and they are as var-

ied and changeable as there are eyewear brands on the market.

To comprehensively explain all the factors that go into the construction and cost of a frame would take too long and require much more space than *Vision Monday* can offer but, nonetheless, we will attempt to explain some of the biggest variables that come into play when determining the final price tag to the consumer.

From plastic to metal and licensed to eyewear original brands, we've spoken to the product developers who are making today's eyewear to get a firsthand account of why frames cost what they do. We hope it will help ECPs better communicate and explain frame quality and price distinction to consumers.

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‘Why Is This Frame So Expensive?’

For optical retailers this, or some variation of it, is a common refrain from their customers. Understanding what actually goes into the physical design of a pair of eyeglasses is the first step to answering this question.

“Consumers, as well as dispensers, underestimate how complicated it is to make frames,” said Mike Hundert, CEO and creative director of REM. “Better than 99 percent of those who sell eyewear have never been inside a factory, and therefore possess too little knowledge about how frames are made. Once you understand that, it is remarkable how inexpensive frames really are. From materials to fabrication, frames are complicated, costly and require lengthy production.”

“The largest misconception is that research and development is free,” added David Duralde, chief

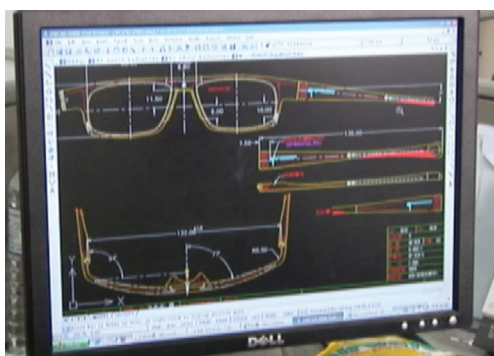
creative officer of the Kenmark Group. “Customers don’t realize that most of our cost is in the design, research and development to achieve a more exciting frame each season. We believe the cost on product translates into a better frame.”

Mark Ginsberg, Marchon’s senior vice president of global marketing, as well as brand, design and product development, also pointed out that, “Eyewear is the only product that is both a medical device and considered a fashion element. What most people don’t realize is that eyewear, unlike other accessories such as jewelry, watches or handbags, is technically a medical device for vision correction and protection and must pass all legal standards in the industry which is actually extremely complicated, controlled and protected. There are many steps involved in producing a frame so that they not only look good but

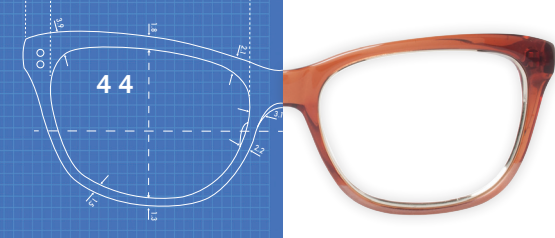
feel good on your head, protect your eyes and are built for longevity and daily use.”

“Once a frame is designed, it goes through a complex pre-production process, including prototyping, software modeling, equipment testing and production of samples,” explained Federico Buffa, head of research, development and engineering at the Luxottica Group. “Depending on the collection or materials used, there can be up to 100 production steps for a single pair of frames. The process is incredibly complex. In each phase, the frames are analyzed and evaluated in terms of engineering complexity, quality and performance. Every choice that is made must tie back to both our consumers’ desires and our goals set for the collection.”

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(Clockwise from top left) Sama’s Ross Vance sketches out frame designs. The design process of a Lafont frame. A 2D AutoCAD drawing of a REM frame design.




‘What Are the Cost Variables of a Frame?’


To illustrate this complexity, Allan Rasmussen, creative director of ProDesign International, outlines some of the general production steps ProDesign adheres to and how cost is a factor along the way:

 **Frame design:** Hand-drawings and/or 3D drawings.


 **Selection of designs:** Some designs require special production methods, for example if you have complex geometries the price between methods can be huge. Already at this stage, you have to judge if the design is special enough to charge a higher price.

 **Feasibility study with suppliers:** Here we would decide to go with titanium, aluminum or stainless steel, depending on construction, weight and market potential. The difference between raw material prices from stainless steel to titanium is a factor of 1 to 3. We also have to consider technique versus quantity—pressing is expensive in tooling, while CNC is less expensive but on the unit price this will be reversed.

 **Technical drawings in 2D AutoCAD**

 **Color Proposal:** You can choose to go with standard extruded materials or with tailor-made expensive handmade block acetate materials. The price difference between those acetate raw materials can be factor of 1 to 8. For the metal colors, you can choose between mono-colors or combination of several, some even custom colors. On metals, you can choose to use the cheaper spray colors or go for electrolytic coloration, printed colors or even PVD for best adhesion. Price difference factor of 1 to 8.


 **Prototyping**

 **Technical evaluation of prototype:** Quality, finish and comments seen from the viewpoint of an optician and the labs. Here we decide if we should spend extra money on techniques that make glazing and mounting easier for the optician.

 **Second set of technical drawings in 2D AutoCAD:** Changes decided after seeing prototypes.

 **Second set of prototyping**

 **Review and note changes, if any, to design, quality, finish etc.**

 **Tooling:** Model specific tooling is more accurate but also more expensive than modifiable toolings.

 **Tooling sample:** The first products made by final tooling.

 **Color confirmation samples:** A full set of prototypes in each color.

 **Changes to colors**


 **Second set of color confirmation samples, if needed**


 **Selection for production**


 **Estimation of quantities needed**

 **Purchase order**

 **Production start**

 **Raw material order:** Acetate sheets, titanium or stainless steel sheets or rods, etc.


 **Parts orders if not processed in-house, i.e. hinges, rimlocks etc.:** Choosing standard versus special made components can be a price factor of 1 to 10.

 **Pressing, cutting or molding the materials:** This alone normally has 80 to 100 production steps.

 **Parts assembling:** Here the metal parts would be welded.

 **Quality Control:** The more quality control the higher the costs.

 **Laminations, if any:** This will bring up the price.

 **Tumbling:** Three times is ideal. Less tumbling is cheaper, but results follow the price.

 **Hand polishing**

 **More quality control**

 **Plating for metal products:** Nickel-free plating is more expensive.

 **Coloration for metal products**

 **Additional quality control**

 **Printing done on temples and demo lenses**

 **Assembling:** Nosepads, endtips and demo lenses are added.

 **Adjustment**

 **Final quality control**

 **Packaging**

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Now obviously these steps will vary from company to company, designer to designer and factoring in the complexity and market segment of each frame or collection in question, but if we use it as a general guideline, it is easy to see that based on this there are a number of variables where cost is a factor.

In asking these experts what the **top three most significant variables** in the manufacturing process that contribute to the final cost of an eyewear frame (barring the lenses) a few key themes arose again and again:

Mike Hundert, REM

"The materials, processing equipment and artisans for the eyewear are the most significant contributing factors in the final cost."

Mark Ginsberg, Marchon

"The level of complexity of the design, the type of materials used (such as real horn or precious metals) and country of origin can all significantly factor into the cost of the frame."

Ross Vance, Sama

- 1. Manufacturing Country of Origin** - All Sama product is produced in Japan. It has the most sophisticated manufacturing techniques, machinery and the highest quality labor force in the world.
- 2. Materials** - Premium materials like titanium, beta-titanium, 100 percent hypo-allergenic materials, precious metals—24kt, yellow gold, 18kt rose gold, and genuine platinum—all have direct relationship to construction and final costs.
- 3. Production techniques** - Sophisticated and jewelry type production manufacturing has direct relationship to the costs. Premium "casting," 600 ton pressing, hand-polishing, laser cutting tools and multi-dimensional computer controlled construction are a few that directly affect costs.

artisans
country of origin
details
level of handcrafted
versus machined
production
complexity

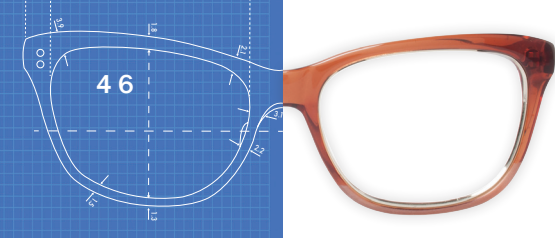
Allan Rasmussen, ProDesign

- Raw materials
- Processing methods
- Level of handcrafted versus machined

David Duralde, Kenmark

- The materials used, including high tech materials like carbon and peek (plastic polymer), precious materials and a vast number of custom materials.
- The complexity of the product—this really defines the production technique needed.
- The details, including decorations, finishes and embellishments that make up the most unique aspect of our products.

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For Premium Frames, It's All About the Details

Material Matters

Clearly, materials matter. According to the Vision Council's June 2014 VisionWatch report for the 12-month period ending June 2014, 40.7 percent of frames in the market were metal, 21.3 percent were plastic, 31.6 percent were a combination of plastic and metal and the remaining 6.4 percent were classified as "other" and included respondents who answered "not sure." But those numbers do not detail the quality, complexity or cost of the frames in each of those categories.

Rasmussen touched on it briefly in his production steps, but REM's Hundert explained further, "First of all, one must understand that the prices of plastic vary widely. Then there are all the other components, from hinges to wire core to consider. For instance, a spring hinge can range in manufacturing cost from 50 cents to \$5. Metal frames can be very cheaply made in bronze, for instance, with poor equipment and little skill. It can hold a lens, but may not do so for long. Sophisticated machinery, be it CNC multi-axis machines to create an acetate frame, or the vacuum system with argon gas used to weld titanium, play a huge role in both cost and quality."

Added Kenmark's Duralde, "There are premium metals such as titanium that increase the costs and there are special handmade zyls with complex colorations that raise the cost. We are finding that a metal or plastic frame can end up costing a similar price. The most significant cost relates to the volume produced. If the batches are small and the plastics are handmade, then the costs are high. If the frame has a complex mold, this can drive the initial cost up. Yet, with injection, if the volume increases then the costs go down because the initial molding costs are spread out over more batches. There is a range of acetate from mono-color to multilayer to eco-friendly, which vary greatly by cost. The more expensive materials tend to be more refined and adventurous which therefore costs more to achieve these results."



(Clockwise from top left) A Safilo worker polishes a metal frame. Acetate temples get tumbled at a Luxottica facility. Sheets of block acetate, courtesy of REM.

Hardware and Extras

Of course, once the material of a frame is determined there are still the rest of the details that need to be worked out to determine the frame's character.

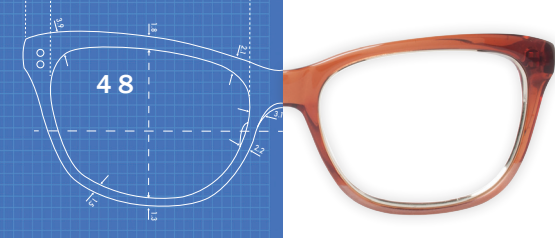
"Types of finishes, decorations and treatments are all key factors affecting cost. Production techniques, precious and semi-precious stones, dimensions and handcrafted elements not only have a huge impact on final aesthetics, they all impact the final cost," explained Luxottica's Buffa.

"You can choose standard components, or you can do as we do, create many of them on your own," said ProDesign's Rasmussen. "Many of our hinges have integrated flex, and we try to integrate them in the

designs instead of simply adding an unsexy flex hinge on the inside of the temple. Our hinge solutions are either totally created by us, or in cooperation with a hinge manufacturer. Additionally, all our acetate frames can be ordered with an optional adjustable titanium nose pad, those parts are designed by us to service our customer better. The difference from standard components to custom can factor as much as 1 to 10."

Sama president, Ross Vance added, "High quality hardware is crucial, plastic faceting and or cutting, more treatments equal higher costs. Polishing is a big cost factor that is not commonly known. High quality tumbling and hand polishing can dramatically affect the costs."

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‘Social and Moral Responsibility Has a Price’

“Anything that requires hands on labor such as applying crystals, wrapping leather or adding intricate color detail all can drastically affect the cost increase,” stated Marchon’s Ginsberg.

“Depending on how you outfit the design such as cast jewelry, European custom hinges, all of these elements can raise the cost substantially, premium materials can increase the costs anywhere from 25 percent to 100 percent,” agreed Duralde.

Country of Origin

The Vision Council tracks the quantity of frames imported into the U.S. from around the world. For 2013, the total quantity of frames imported was more than 88.7 million with a total value of slightly more than \$1 billion dollars, which averages out to a cost of \$11.32/pair. By far the largest number of imports came from Asia at 79.7 million, with Europe coming in a far second at 8.4 million.

Jobson’s Frames Data database also breaks down the countries of origin for the frames they list and their numbers show that 77.7 percent of their frames are manufactured in China, 7.9 percent are manufactured in Italy, 4.4 percent are manufactured in Japan

and 4.0 percent from Korea. Hong Kong, Austria and France all represent between 1 percent to 2 percent of the frames listed, while the 13 other countries where frames are manufactured represent less than 1 percent each.

Our experts have distinctly stated that the country in which their frames are manufactured affect the cost but it isn’t just labor costs and skill level that determine cost. Socially compliant factories, those that ensure the safety of their employees and pay a fair wage, also affect the cost of goods.

“We manufacture in the Wenzhou and Shenzhen areas of China, as well as Italy and Japan, in order of least to greatest cost,” shared Duralde. “Of course we select factories that would best suit the design of the style but additionally, all of our licensed brands must be manufactured by socially compliant facilities.”

“There are brands that have strict codes of conduct that factories must abide by, and it is incumbent upon us to organize regular factory audits by third party companies that certify compliance with regulations,” explained Hundert. “These requirements focus on issues ranging from workers’ rights and safety, to environmental stewardship. This has a pro-

found effect on product development since it limits where the goods can be made. If using a fully socially compliant factory, as our licensors require, the costs of manufacturing are higher as well, by about 20 percent.

“Audits, investing in making our sources compliant with all laws associated with labor, safety, health and the environment. Most factories do not operate according to these requirements, especially insuring all employees for unemployment, retirement, health, maternity and worker’s compensation despite these requirements being placed into law in recent years. Factories that do act responsibly are forced to charge more than those factories that ignore the laws. It is our obligation to create the infrastructure to mentor and monitor these factories to ensure their on-going compliance with all regulations. Social and moral responsibility has a price,” concluded Hundert.

The Elusive Intangibles

One of the hardest concepts for consumers, and sometimes even ECPs, to grasp is that the physical frame, the parts that can be seen and felt, aren’t the only things that determine its cost.

“For most branded product there can be licensing fees, royalties, advertising and marketing costs. Packaging, shipping and compliance costs all factor in for any frame as well,” stated Marchon’s Ginsberg.

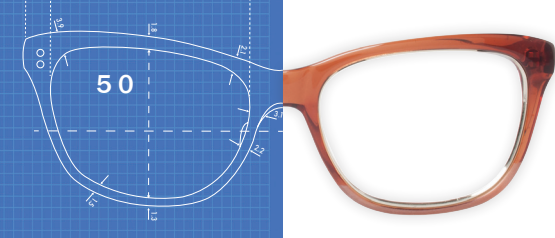
“It’s pretty easy to understand, that if we all sold our products at the same price, the company who has to pay for a license to a brand-owner, could not spend as much on the product as we can, and they would have to cut costs somewhere,” added Rasmussen. “The products will be technically standardized or quality will be sacrificed. Either you compete on design and quality, you compete on brands or you compete on price.”

“Quality control, inspection, hand work and packaging are common expenses not realized by the consumer, as is designer related branding a huge cost

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(Clockwise from top left) Luxottica’s Dongguan, China factory. Some of the most common areas in Asia to make eyewear. A Luxottica factory worker does detail work.



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A Frame Costs More Than its Cost-of-Goods

added,” contended Sama’s Vance. “The added costs of license fees, marketing etc. cost the end consumer and the conception is that the products offer a similar quality, design and have the same presence as the designer’s clothing and accessories; which isn’t always the case.”

Kenmark’s Duralde believes the licensing arrangement is a value add. “Licensing fees are significant but are not a large percentage overall. Working with licensed brands adds value to our design. With our licensed brands, their name on the product translates into them working directly on the product. Their brand name equates to real value and not just perceived value. That is our role as the licensee, to ensure that the customer sees the enrichment to the frame as a result of the licensor/licensee partnership,” he said.

But he does raise some other factors consumers may not be aware of. “The cost of having a more reli-



Quality control: the finished frame is compared to the original technical drawing.

able and service-oriented partner means the vendor often absorbs costs such as changing out the assortment and taking returns when a style doesn’t sell. Serving our accounts with extended terms, a liberal

return policy and having a great sales force isn’t free. There are many costs involved to deliver premium product and a carefully orchestrated infrastructure of trained sales reps that can service the customers well,” Duralde explained.

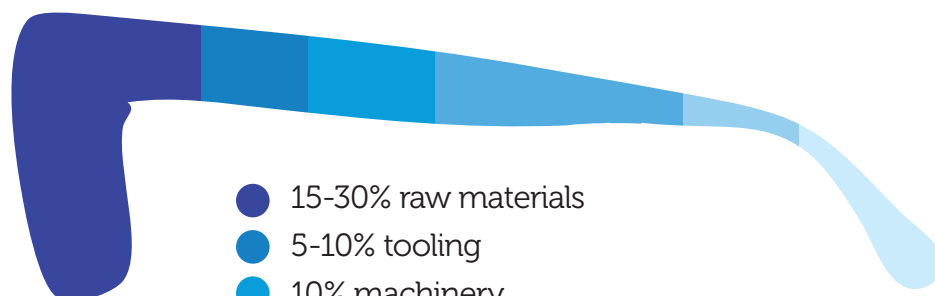
“Running an organization, a global one in REM’s case, is complicated and costly,” agreed Hundert. “Overall, operating expenses eclipse that of the product, but cost-of-goods is a highly variable one that requires corporate strategy and discipline. Frankly, another reason for frame costs being what they are is ‘inventory risk.’ Suppliers bear all the risk today, with retailers entitled to return anything that doesn’t sell. At the same time, suppliers are expected to have inventory on-hand for every SKU to be delivered immediately. There is a price to pay for that availability. We are either short of inventory and we pay the customer service penalty. Or we are over-stocked and

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The ‘Anatomy’ of a Premium Frame

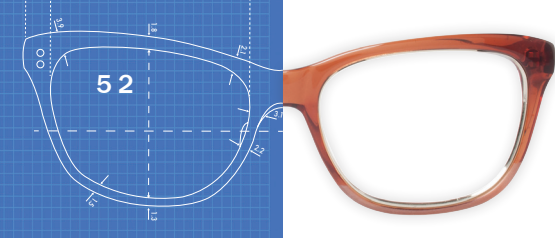
The product itself is certainly at the epicenter of cost,” said Hundert from REM. “Just which part costs the most is impossible to say, since every frame is different. Even licensing fees vary considerably from brand to brand, not only including royalties, but costs such as marketing can be significant.”

In the makeup of the cost of a frame, ProDesign’s Rasmussen broke down, at right, a rough estimate of percentages that reflect the cost inherent in the construction, like materials and labor, and the more intangible costs like licensing fees, marketing, shipping, etc.



- 15-30% raw materials
- 5-10% tooling
- 10% machinery
- 30% labor
- 5-10% coloration
- 10-20% shipping, licensing fees, operations, etc.

Percentage estimates courtesy of Allan Rasmussen of ProDesign.



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‘So, Why IS This Frame So Expensive?’

we pay through the cost of closing out goods below their cost of manufacturing. These costs are part of the supplier’s calculus [when determining MSRP].”

The Takeaway

Clearly the number of factors that go into determining the cost, and ultimately the price to the consumer, of a frame are far too numerous to list ad nauseam to them during the purchasing process, so what advice do these experts have for conveying quality, as it determines price, to the buyer?

“I can make a lot of decisions related to design, raw material, production method and finishing level, but if the end consumers cannot see and feel it, or if the optician cannot explain the difference, our product will not be worth the price we would

have to charge,” explained Rasmussen of ProDesign. “That price always follows quality, technical level or man-hours involved. Always ask the reps to explain if a certain product is priced higher than most others. There is always a reason. If you cannot see it at first glance, you have to be able to explain it, otherwise it will not be worth the money to the consumer.”

“Retailers can help create a more educated consumer by communicating the differences that elements like material and process can make in a pair of frames,” confirmed Buffa. “The manufacturing process is highly-technical—not as easy to illustrate at the store counter. What consumers can easily understand is the tangible benefits of a great pair of glasses. Superior materials equal more durability. More durability equals longer lasting. More refined finishing

techniques equal a visibly better fit. All of these things can be communicated easily.”

“Look at the product. Feel the product. Examine it for smooth surfaces and transitions, clean solder and welding points, polishing around the hinges, not to mention the obvious, fit and feel,” said Hundert.

“It is all about feel,” agreed Duralde. “The customer wears it most every day. It represents them. The distinctions are found in the details that are not visible. Feel the edges, are they sharp or are they polished? Close the temples, feel the action on the hinge. Does it close smoothly each and every time? Is it comfortable on the nose? The slightest little cutout of acetate behind the bridge achieved that. How is the frame balanced both on the face and in weight? The quality, and price, is representative in the feel and the fit.” ■