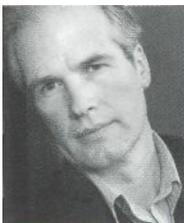
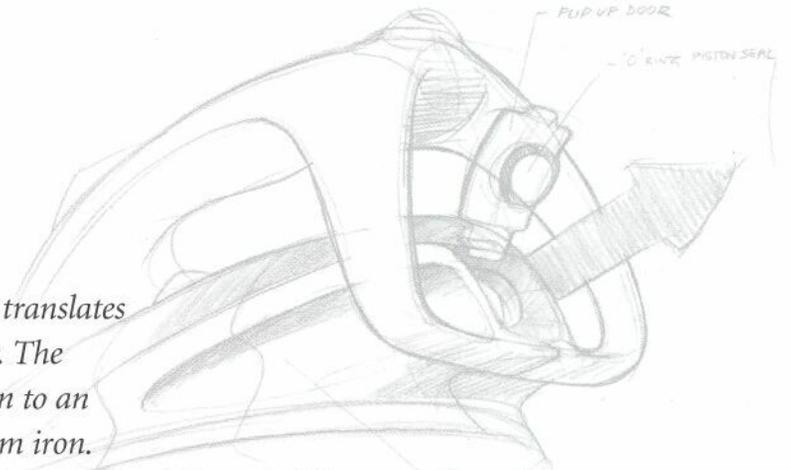


Innovation in Practice: The Calor Aquaspeed Iron

by Dick Powell

In this case study, Dick Powell translates innovation theory into reality. The challenge was to bring new vision to an old problem—redesigning a steam iron.

Researchers mapped design, product, and social trends. They reconfirmed the corporate brand message as successfully engaging customers. They distilled breakthrough opportunities, and then the development team and the CEO made it happen with a design that is changing expectations and exceeding sales projections.



Dick Powell, Director,
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There's a lot of baloney spoken in the name of innovation theory... and some useful truths. After 20 years of designing consumer products, I can offer these observations:

- Innovation requires a consummately well-articulated vision of what you are trying to achieve—one that all parties, from the engineers to the eventual consumer, can believe in.
- Innovation requires at least one person who fully understands all the ramifications of that vision and is armed with the authority and means to make it happen.
- Innovation requires experience, and the insight that comes with it, to

balance what's important and what isn't, at any one point in the process.

- Innovation is often not a big idea that changes everything, but rather a series of smaller ideas that fit together in a unique way to create something new and better.

Oh—and two more:

- All people are creative, but some people are more creative than others.
- It's never as easy as you thought.

The Calor Aquaspeed iron project reflected a number of these observations.

The nature of the beast

Seymourpowell has designed a huge number of products, from trains and cars to digital watches and laptops. When people ask me, "What's the hardest product to design?" I say it has to be the steam iron. Why? Because the complexity of a steam iron's internal workings is wholly inseparable from its external form, which in turn is determined by its ergonomics on the one hand, and its functionality on the other. Factor in the need for ease of manufacture, low cost, and reasonable investment, not to mention on-shelf differentiation in a market in which products are more alike than different as a direct consequence of all this, and you can begin to understand why the word *styling* (and by that I mean external design) is a wholly inappropriate word. It's a huge design problem ... and that's before you even contemplate being innovative.

Calor is a French company and brand that belongs, along with SEE, Tefal, Rowenta, Moulinex, Arno, and Krups, to the SEE Group. SEE stands for La Societe Emboutissage de Boulogne, which originally started life as a metalworking company making pressure cookers. Having variously bought and acquired Calor and Tefal, SEE became the SEE Group, which continues to sell products under all three of these well-established brands in France, but



Figure 1: Avantis, Seymourpowell's first iron design for Calor, modernized the "fast" look.

sells the output of all three companies elsewhere under the name of Tefal (except in the US, where the brand name is the slightly amended and hyphenated T-Fal). As a group, they are one of the world's largest and most successful manufacturers of domestic products and appliances.

Seymourpowell's relationship with the companies of the Group goes back to 1985, when we designed the world's first cordless kettle, the Freeline, for Tefal. In the ensuing 19 years, we have worked with the Group to create a considerable number of innovative products, including deep-fat fryers, vacuum cleaners, beauty-care items, irons, kettles, and toasters.

Avantis

The redesign of Calor's Avantis steam iron was Seymourpowell's first linen-care project for the company. We had worked with Calor before, so we already knew that the firm well understood the importance of expressing its brand values and communicating functionality clearly and persuasively through the design of its products. We hoped to continue that tradition with the Avantis project.

Calor irons already had a unique differentiation point: Their soleplates, which in other irons are typically made of stainless steel or anodized aluminum, are enameled. This gives them a finish that makes them very durable and resistant to scratching and discoloration. Even more important, however, is the fact that printing two different colors of enamel—one as a base colour and the second overprinted as a series of lines and details—allows the iron to float on the ridges created by the two-color surface, decreasing friction and increasing its "glide" and hence the speed of ironing. Calor designers made the most of this by aiming for a streamlined, dynamic, "fast" look.

For Avantis, Seymourpowell modernized the fast look by removing its edginess and softening it. We created a highly streamlined, dynamic, contemporary iron with a new soleplate design that featured a point at the back of the iron to help part the fabric on the backward stroke (figure 1).

Steam Generators

Seymourpowell then moved on to other categories of iron and linen-care products, including a complete rethink of the steam generator, a category that Calor had pretty much established. (For those who have not seen or used a steam generator, they improve and speed the ironing process because they produce much more steam.) Previous generators were basically boxes with irons plonked on top; the box acted like a glorified kettle. This design creates a fantastically effective ironing system, but there are drawbacks: The iron is unstable, and using it is tiring, since the user has to lift the iron back up onto the steam-generator box at the end of each burst of usage.

To combat these problems, Seymourpowell reconfigured the generator's internal architecture to achieve an inclined iron "rest" at a significantly lower level (figure 2). This proved to



Figure 2: The Calor Pro-Express and Express generators (front and rear, respectively) won a DBA (Design Business Association) Design Effectiveness Award for Calor and Seymourpowell.

be economically better (less lifting and wrist rotation), and it also allowed the iron to be nestled into the "box" for greater stability and safety. The product, available in two variants called Calor Express and Calor Pro Express, was more integrated, both visually and in use, than its predecessors and the competition. It changed the whole game in the category, increasing sales and market share, and in 2002 won for the Seymourpowell/Calor team a DBA Design Effectiveness Award.

Avantis 2

After the design of further ranges of both high-end and low-end irons, the moment finally came, four years after its creation, to reconsider Avantis—the mid-line range. It was a moment to pause and reflect on where we were and where we were going. As a business, Calor is passionate about innovation. It spends time and money looking for ideas to give its products a competitive edge. The shelves in the company's R&D department testify to that. They groan under the weight of prototypes and mock-ups of every conceivable idea. It's not for lack of trying that very few make it; it's because it's so difficult to produce a new and unusual product but still sell it at a competitive cost (especially alongside Chinese products). As is so often true, the process of developing new products is analogous to pushing a big boulder over rocky terrain—much time is spent in studying which way looks

the easiest and most promising, when what's really needed is a helicopter to take an overview and scope out the big picture, and all the factors that might bear upon it—a strategic review.

Enter our research, branding, and strategy team (SPF—Seymourpowell Foresight), which had not been involved in previous Calor design projects. Bearing in mind that the core value of fast had been evolving without any real strategic purpose for close to 10 years, and that the competitive

context had changed significantly over that time, the key brand question was—does fast still work as a core value? To map this context and answer that question, I briefed the Foresight team to look at a large number of relevant landscapes for the client, including:

- A timeline showing a visual history of recent developments in the Tefal/Calor range
- National market analyses of key irons mapped against price and visual sophistication

- An analysis of the success or failure of brand language used by Tefal/Calor and its competitors
- A presentation of the opinions of an independent, external panel of design experts
- An analysis of the most pertinent general, social, and product trends
- A strategic formulation of the way forward, based on this initial analytical and trend work

Some Answers

The fundamental conclusion was indeed that fast still worked as a basic identity for Calor/Tefal, communicating efficiency and contemporaneity. We believed very strongly as a result of our analysis that fast had established for the brand a relative degree of distinction in terms of brand language within a highly homogenized marketplace, where products are more similar than they are different. Pointing the way forward, we stated:

.... We need a "beautiful" product which engages emotionally. Beauty is not a word designers are comfortable with, but a beautiful product needs to be harmonious, balanced, proportioned, and express a simplicity of use and purpose.

The strategic review also identified several potential strands for development that mirrored changing patterns of use among consumers (these must, for the moment, remain confidential, since they are still under development).

In parallel with SPF's research (and that's important—because serial idea generation is never as effective as doing it in parallel, in my view), the creative team began to generate concepts around specific ironing problems that might then be applied to Avantis 2. We hardly needed a focus group to tell us that number one on consumers' wish lists was a truly cordless iron. In fact, cordless irons do exist, but current technology leaves them quite compromised in performance, and for cost reasons alone they fell outside our brief. I mention them here only because they illustrate what's

wrong with the kind of innovation theory predicated on consumer "insights," which too often allows for the complete dislocation of new ideas from the harsh realities of both science and commerce. Instead, what's truly needed is balance—balance between what you want to do and what you can do. Balance requires extensive knowledge of all the issues surrounding the problem, along with an instinctive feel for how their resolution might physically be realized—long before you can actually try to do so.

Many ideas were generated, some of which have gone into longer-term development at Calor and so can't be discussed here. But again, we didn't need a focus group to identify two immediate problem areas: filling an iron with water through a hole the size of a postage stamp, and stability—to combat the iron's annoying tendency to topple off the ironing board. The solutions too are blindingly obvious: as large a filling hole as possible, and a huge heel for stability. But how to achieve these without being ungainly, ugly, heavy, and unwieldy?

Usually, innovation lies neither in identifying a problem, nor in proposing abstract solutions, but rather in embodying those ideas and solutions effectively. This, I think, is the designer's greatest strength—the ability to conceive a vision of the whole quickly and fluidly, without losing sight of the myriad factors that ultimately affect its resolution.

In contrast, my experience of working with talented creative engineers is that they are rarely at their best trying to resolve an abstract problem. But give them the same challenge armed with a credible and compelling vision, with which they can understand exactly what is needed and in what form, and they will examine an array of potential solutions methodically and analytically until they find one that works. Far too many companies rely on their R&D departments as their primary source for innovation. But what this achieves, while it's not always a bad thing, is the development of a new process or technique for which designers have to find a use and marketers a user. For Avantis 2, we were able to articulate a concept at the

very beginning of the process, initially as a series of sketches from the creative workshop and quickly thereafter as foam models, which the company's development team, as well as its senior management and marketing, could immediately get behind. Yes, many of us could see serious problems with it, but everyone could also see that it was compelling—that if we could get it to market at a competitive price, it would be a winner. After that, it became a question of how the hell to make it work and to manufacture it.

Following the Concept: The Aquaspeed

The concept we put in place was for what we called an "open-back" iron, in which the heel is completely open and separated from the body—a large loop on which the iron could sit for enhanced stability, but without adding bulk and weight (figure 3). Inside this loop, at the back of the iron, was a large trapdoor through which the reservoir might be filled more quickly and more conveniently. We suspected too that this new architecture might prove a useful solution to new and more rigorous EU-inspired "drop tests"—the loop potentially helping to absorb shock—and this proved to be true.

As the development team got to work in detail, we put aside some of the known prob-

lems and forged ahead as rapidly as possible to a finished model (figures 4-9). This was a change of process for us, as well as for the client. Previous to this project, we generally went through extensive development on each new product, absorbing considerable time and money establishing feasibility before that product could be researched with consumers ... and then potentially be rejected. Better by far to gauge consumer interest in the broad concept as quickly as possible, which the model allowed us to do.

The Calor team's problems (only some of which had been anticipated) were just beginning—and this project would no doubt have failed in a company with a lesser culture of innovation than that of Calor. Crucial to its success was the vision, decisiveness, and guiding hand of CEO Jean-Pierre Lefevre, who has an instinctive feel for his products and their market. In my time, I've seen many great ideas at other companies become diluted, changed beyond recognition, or abandoned completely in the face of demanding technical challenges. But this CEO ensures that his team does not lose focus on the important issues.

Not surprisingly, most of the problems revolved around the innovation of filling the iron from the rear and had to do with sealing,

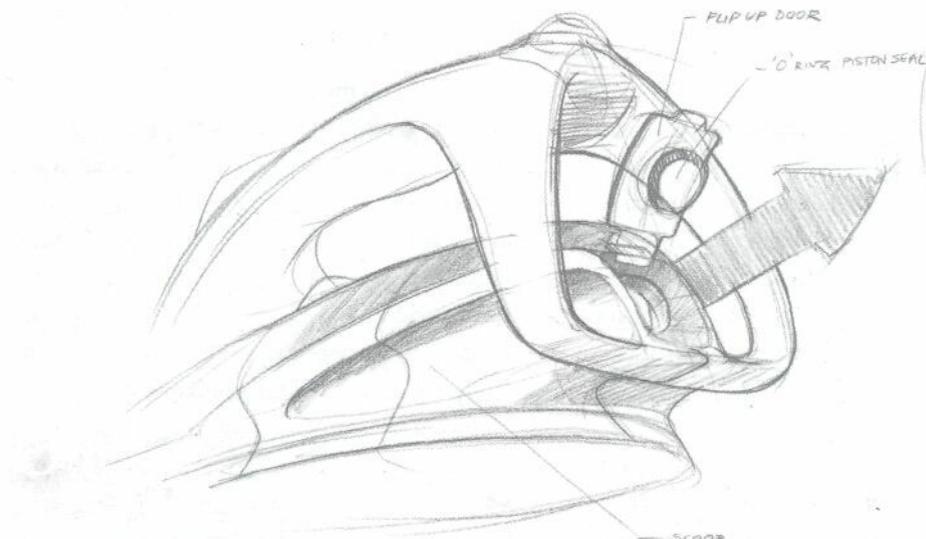


Figure 3: One of the earliest sketches for the "open-back" concept, which would make it possible to fill the iron with water via a trapdoor at the rear. Even at this very early stage, the whole idea of a light, open, airy structure at the heel (in order to reduce bulk) is considered in the context of allowing excess water to flow through and around the iron.

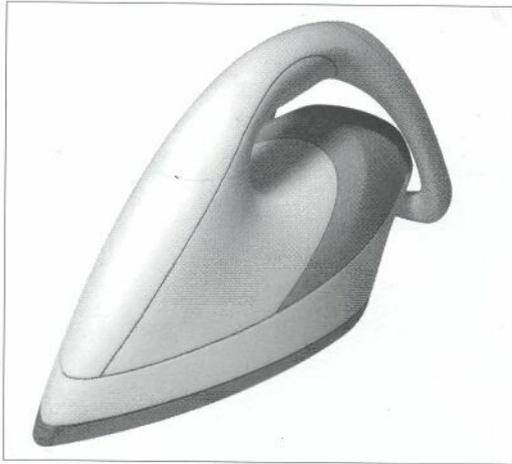


Figure 4: One of many early hand-made foam models that encapsulate the concept in three dimensions and allow more-detailed evaluation of the complex molding issues. The photo of the foam model has then been worked in Photoshop, coloring the tank blue and looking at alternative split-line positions.



Figure 7: The finished model, machined from Alias data. This model was crucial on a number of levels—it encapsulates the whole team’s best thinking at a particular moment (even though much remains unresolved); it was used in consumer research; it became the focus for subsequent development; and it allowed pre-selling both within the business and outside.

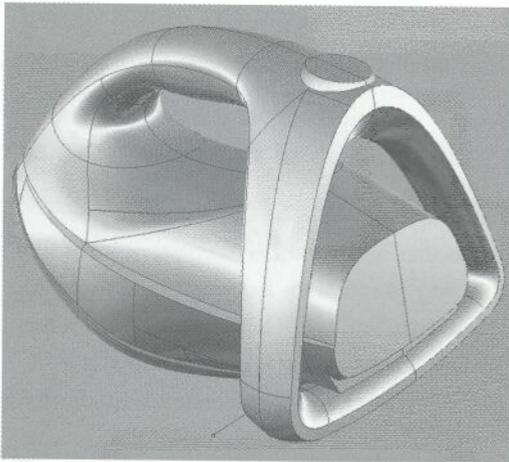


Figure 5: Defining the 3D form using Alias, the preferred software for resolving complex forms. These early surfaces were used to machine more-accurate foam models to better reflect the technical probabilities and required volumes.

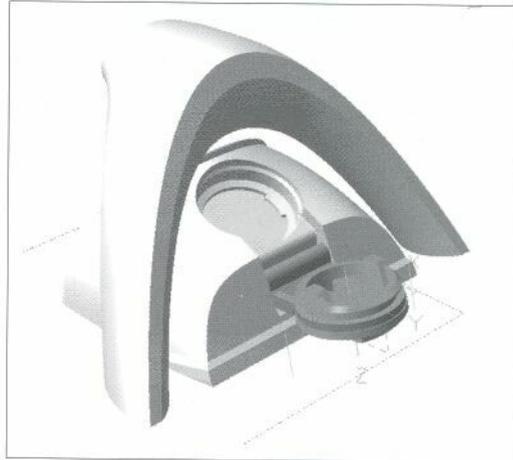


Figure 8: Detailed resolution of the trapdoor—many different solutions had to be explored. Details like this are often detached from the whole and studied piecemeal. Here, the designer is working in Pro-E looking at the implications of hinging low-down.



Figure 6: Finished photo-realistic rendering. Renderings and animations like this are a useful by-product of defining final surfaces in Alias. The primary purpose of final surfaces is to allow the rapid production of a finished model.

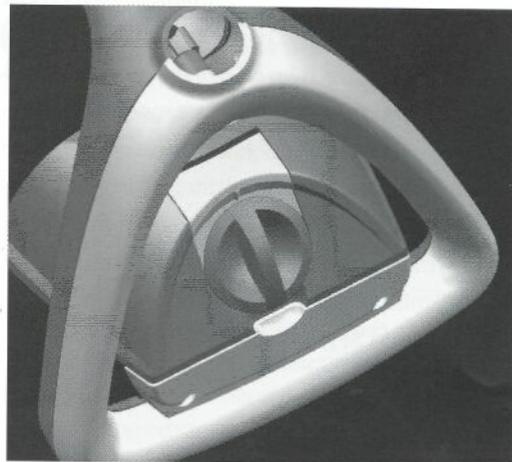


Figure 9: Getting closer to the final resolution—Calor’s engineers are working on specific problems alongside Seymourpowell’s designers. This is a screenshot from their Unigraphics CAD system.



Figure 10: Aquaspeed—the finished product. Compare this with the finished model and (other than color) spot the differences: a "blink test" would say they are the same; a closer inspection would reveal some less obvious changes. Their similarity illustrates the close working relationship, respect, and understanding between Calor and Seymourpowell—which, for anyone buying design services, is something to look for when assessing technical competence.

air pockets, and venting, and with keeping water safely away from the electric components. Some of these problems required design changes from our side, particularly in optimizing the filling angle, but none required great compromise. It's a testament to the creativity of the development team that their work in finding solutions yielded new patents, which will make it difficult for Calor's competitors to catch up.

The new Avantis was eventually christened the Aquaspeed (figure 10). It was launched last January, and since then sales have more than met expectations— not just because this is a better innovative product, but because its design effectively communicates its benefits—speedy, fuss-free filling and improved heel stability without weight. In short, this iron sells itself. Aquaspeed is a credit to every member of the Calor and Seymourpowell team—and to

the company itself. The Calor culture understands that innovation is the best, perhaps the only, way to maintain a strong brand in the face of low-cost "me-too" OEM products from the Far East. Of course, as a manufacturer of consumer products, Calor understands the fundamental role of design as a creator of attractive products. But much more important, it values design at a strategic level and as a creative catalyst for innovation ... and that's why Calor is my favorite client! ■