Industrial Design of the HP CE Instrument

It is not always recognized, and consequently not acted upon, that the contents and significance of industrial design for the success of products and the image of the company have changed in the past few years. Products have not only a technical, but also an aesthetic function. Together with some other representative features, such as advertising, company buildings, letterheads, packaging, exhibition booths, and the like, product design determines a major part of a company's image.† Today, products must not only be reliable, efficient and user-friendly, but also look like it. Visible quality today is the main attractor in many cases. In particular, the leveling out and standardization of technical achievements, even on the highest levels, lead to outward appearance being the decisive factor in the purchasing decision process more and more frequently. Last but not least, products, which also represent the company concept, have to be in line with the identity of the company. Thus, what is important is not avant-garde industrial design, but the successful combination of innovative and traditional elements.

Industrial design, therefore, is a part of product quality. Whether we thereby achieve the improvement of quality of use or acceptance among a specific target group, or capitalize on the identity of the company, proper industrial design is a sales promoting product feature. This applies not only to consumer products but also to commercial products. Very often, the first look at something determines whether we continue dealing with it or leave it alone. The quality of product design should make product quality the focus of customer interest right at first sight.

Internal Architecture

The first step towards good industrial design consists in laying out the components inside the instrument. As early as the investigation phase of the HP CE instrument project, the engineers were prompted to think about the dimensions and forms of the components they were responsible for. Rough details were then used to create all components from cardboard in duplicate. In a joint creative session, the entire project team used the models to arrange the components in multiple ways, finally deciding on one alternative. Understanding for each other's problems was gained within the team at a very early project stage: airflow and thermal problems, safety concerns, cooling, ease of use for service staff and users (which the industrial designer is also responsible for), and the like. This process not only led to the project being faster and more focused, but also had a teambuilding character.

† Image means the company as perceived by its customers. Identity means the company as it really is. Ideally, image = identity.

The immediate effects of the internal layout on the user interfaces become obvious in the vials, bottles, and cassette, which can be exchanged easily and intuitively. This ease of use is supported by the design of the instrument exterior, which visually reduces complexity.

As the project proceeded, a model of the outside cover was built (see Fig. 1). The visibility of the product in the form of the model further enhanced identification with the project, even beyond project team borders.

Appearance

Industrial design is not entirely up to the industrial designer. Carefully balancing innovative design with company-specific design within the sense of the corporate identity on the one hand, and on the other hand, emphasizing product-specific features to the best advantage, benefit both the product and the company.

The outward appearance of the HP CE instrument is designed to achieve a number of objectives:

- Emphasizing system character with a view to the HP PC, since the HP instrument is controlled by a PC. If the outward appearance of these two components is harmonized, it not only suggests that they come from the same company, but much more important, that they easily communicate with one another. In our case, this is achieved by equal use of volumes and forms as well as by HP identity elements such as coloring (bottom: dark grey, top: light), radii, HP nameplate, and power switch (see Fig. 1).
- Emphasizing system character with a view to HP analytical systems. The HP CE instrument is often to be found side by side with other HP analytical instruments in a lab or as part of an analytical system. If the outward features of our analytical instruments are in harmony with one another, this suggests to the customer that a complete solution to a problem is available from one source. In the case of the HP CE instrument, this is achieved by using, in addition to the design elements already mentioned, HP Analytical Products Group typical design or user elements such as, for example, the baseplate image, the semicircular pushbuttons set off by coloring, equal textures, equally colored windows, doors always opening in the same direction, equal status LEDs, equal fonts, and the like. The constant repetition of these visual and functional characteristics of the user interfaces makes a major contribution to ease of use by recognition. The particular challenge is always to find new solutions for new requirements that are technologically feasible but also continue the HP design tradition, so the customer finds it easy to get along and immediately accepts the solution as an evolutionary step.

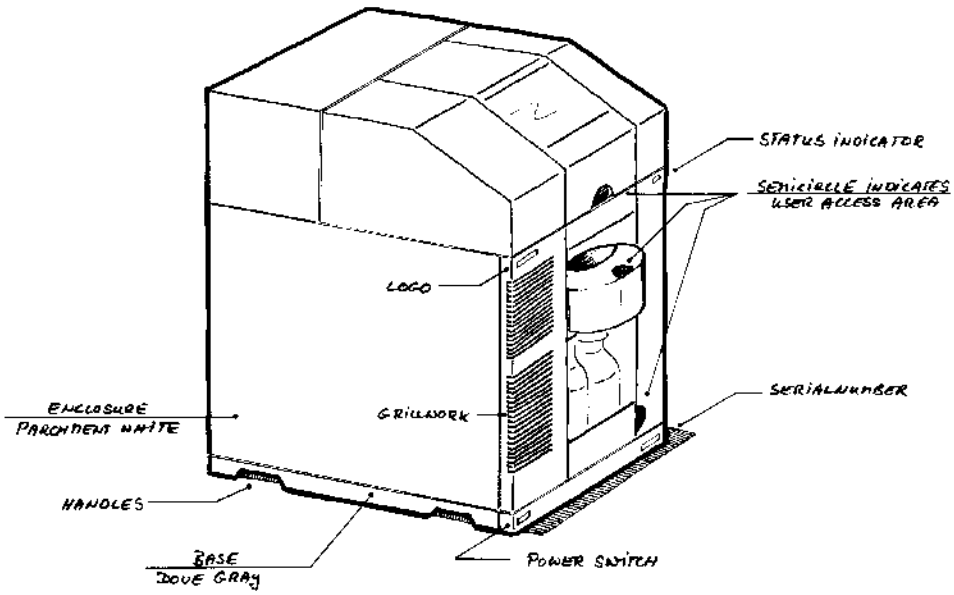

Fig. 1. Industrial design features of the HP CE instrument.

- The individual character of the HP CE instrument is emphasized by the basic instrument volume as well as by the visibility and form of some specific areas. The window parts show the areas relevant to the customer (cassette, sample tray, and replenishment bottles). Like these parts, the tray balcony, for example, is designed in such a way that it facilitates function (access to vials) on the one hand, while at the same time characterizing the look of the instrument clearly and unmistakably (and also optically reducing instrument depth). Emphasizing the vertical lines of the instrument optically supports the narrowness of the instrument.
- What is also particularly important is the visual expression of quality. Especially at a time when some instruments show only slight technological differences, customers should be convinced of the quality of our instruments at first sight. By using the right materials and manufacturing processes, we have attempted to distinguish our products qualitatively from those of our competitors, so that workmanship and finish provide our instrument with a highly professional appearance.

At the International iF Design Competition 1994, the HP CE instrument was awarded a prize for its good design and was seen by more than one million visitors in a special exhibition at the Hannover Fair and Cebit

Acknowledgments

The ideas of industrial designers often pose a challenge for those having to translate them into real parts. I would therefore like to thank all the managers for having strategically supported industrial design and, in particular, the mechanical engineers: Martin Bäuerle, Werner Schneider, and Hans-Peter Zimmermann, who despite occasional heavy time pressure made essential contributions to the quality of the industrial design.

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