LathropNEWS

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Biotech Instruments

Diagnostic Instruments

Production Automation

Consumables / Disposables

Consumer Products

ISO 9001 CERTIFIED

Design Is More Than Skin Deep

Article By Rick Emerson, Director of Industrial Design at Lathrop Engineering

We all have heard the phrase "Beauty is more than skin deep." Without internal beauty, the external (cosmetic) beauty is superficial. This applies to more than people. Products are exactly the same.

(Good) Design is more than skin deep

The true beauty of a product is more than what is seen on its surface. Industrial design is concerned with more than a products outward beauty. A truly beautiful product will not only look good, but be well engineered and manufactured to a high quality level, will function flawlessly, be easy to understand and use, and will provide a satisfying user experience that will build customer loyalty. Unfortunately most people equate industrial design work with only creating the exterior design of the product. When industrial design is misunderstood, occurs too late in the development process, or is budgeted improperly, a superficial cosmetic design may be the result. The product will have no inner beauty; and, while it may garner initial attention in the market and delight by the consumer it will soon become unsatisfying as its internal flaws and shortcomings emerge. Products that end up in this predicament usually had the industrial design process mismanaged during product development.

Common misconceptions about industrial design

It is easy to see the external quality and attributes of a product. Its appearance gives the product personality and conveys a very power-

ful message to the consumer. That message can be either a positive or negative message depending on the quality of the industrial design work. The importance of this message should not be underestimated; however, it is not the only message the user is receiving nor is it always the most important message.

Industrial design plays a major role in creating the appearance for a product and therefore its initial message. Misconceptions and misunderstandings about industrial design persist with numerous program managers, engineers, marketing personnel, and manufacturers. Many only see industrial designers as contributing to a project by defining the external appearance of the product. This common misconception leads to the incorrect assumption that industrial designers can only do product styling, select a color or place a logo on a product. While these are tools in an industrial designer's toolbox, they are only a subset of what industrial designers contribute to a product design.   These
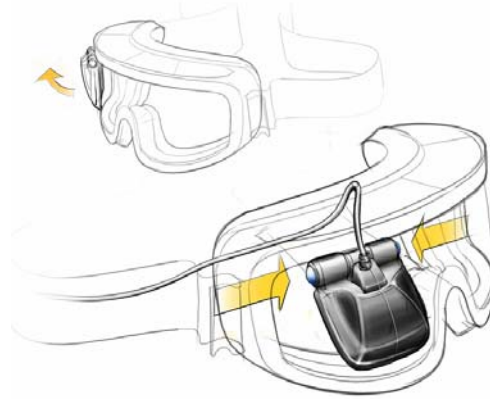
Industrial Design Tasks:

- High level brainstorming product concept development
- Championing innovation
- Early product visualization (concept renderings)
- Human factors research – ethnographic research
- Human factors evaluation and analysis
- Ergonomic design layouts and mock-ups
- Conceptual layouts
- Competitor design analysis
- Visual Research and Trend Analysis
- Design concepts (styling)
- Form development & evaluation mock-ups
- CAD modeling & Surface development
- Product graphics and labeling
- Human Machine Interface HMI / User interface development
- GUI development
- Color studies and specifications
- Materials and Finishes selections / specifications
- Appearance models
- Product renderings & Animations

"Design is not just what it looks and feels like. Design is how it works."

Steve Jobs

are key elements in the visual design of the product but may completely ignore the functional / user interface aspect of the product experience which is just as important to the industrial designer, not to mention the end user. While the external appearance of the product sends the customer that initial message, the unseen design qualities of a product will make the lasting impression which determines the ultimate user satisfaction of the product.

To achieve the best value from using industrial design the industrial designers must be allowed to contribute to the early conceptual brainstorming and the human factors aspects of the product development. This will ensure that the product not only has a beautiful exterior but that its beauty goes throughout the product and its use experience.

Many of you have seen the beautiful sketches and renderings produced by industrial designers. They are beautiful in their own right; but, unfortunately they can also help drive the previously mentioned misconceptions that non-designers may have. Others do not see the work that goes on behind the scenes prior to creating these concepts sketches and renderings. So, what is it that industrial designers really do?

What industrial designers do!

First and foremost industrial designers are problem solvers. Every product or system has its purpose or function. At the beginning of its product development, this function is nebulously documented via product requirement
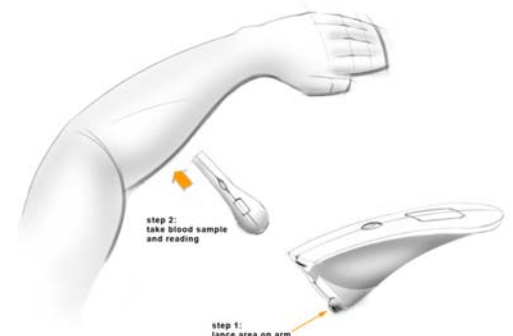
documents, marketing requirements and product specifications. Many times these requirements conflict with each other. What typically can be missing are user requirements. End users are not employed by the company; therefore, they do not have their voice in developing

"External appearance conveys the brand message... unseen design quality provides lasting user satisfaction."
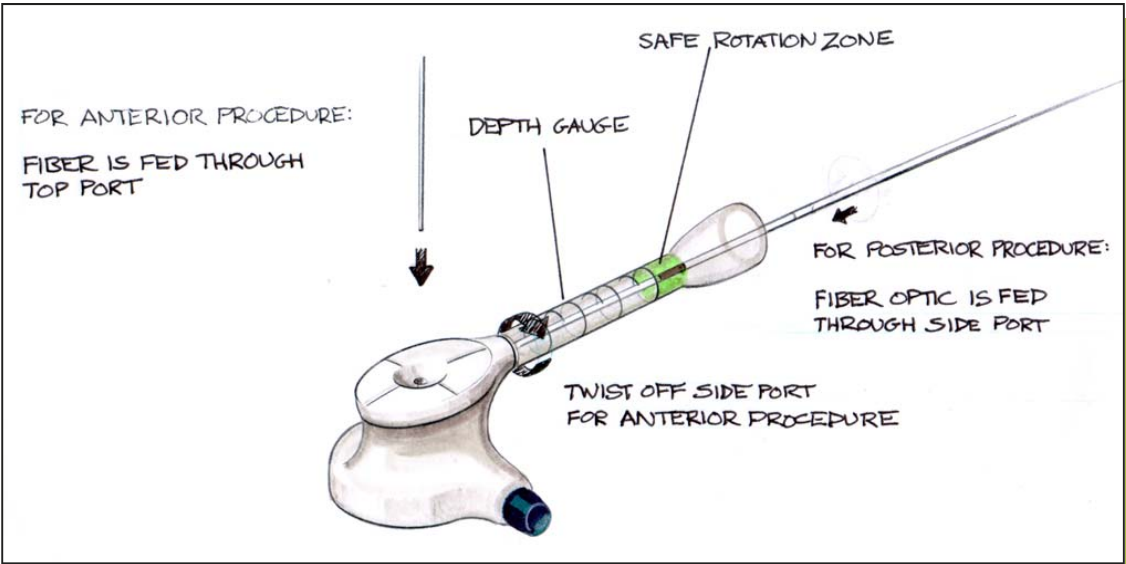
a set of requirements like other stakeholders. A key function of industrial design is to be the user advocate.

An industrial designer tries to uncover the needs of the user and makes sure those needs are satisfied by the design and features of the product. An industrial designer works to define the product architecture, layout, and design in order to best meet this purpose. In their work, the designer balances the needs of the company (engineering, marketing, manufacturing, and other disciplines) and the user in order to arrive at the best solutions. The industrial designer looks at the big picture and gathers information from all stakeholders. Based on this information and their training in art, engineering, human factors, marketing and psychology, concepts are developed that balance the tradeoffs between the stakeholders to arrive at solutions to the myriad problems that may exist with satisfying challenging or competing requirements. Good design can quite often be about leaving things out, rather than adding things in!

See the side bar on the left to get a better understanding of the typical tasks an industrial design team will perform during a complete product development process.

For anterior procedure:
Fiber is fed through top port

Safe Rotation Zone

Depth Gauge

For posterior procedure:
Fiber optic is fed through side port

Twist off side port for anterior procedure

What projects need industrial design?

All product development projects need industrial design in one form or another. Not all projects may require the same type or amount of industrial design as others; but, even the most engineering oriented product that may not even have a cosmetic enclosure can benefit from the industrial design process being part of the product development strategy. All

"Good design can quite often be about leaving things out, rather than adding things in!"

products have users, and it is the role of the user advocate which the industrial designer plays which always adds value. It may only be from a human factors stand point or maybe safety or labeling; but, industrial design will add value to the end product.

When industrial design is not involved or misapplied during a project, it is usually obvious in its appearance, its poor ergonomics or from the unsatisfying user experience. The end products typically leave the end user unfulfilled. These users are highly unlikely to be repeat customers as they were left wanting something more. Involving industrial design will improve your products and your users' experience with them.
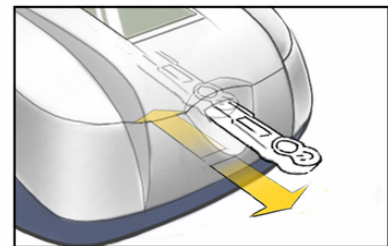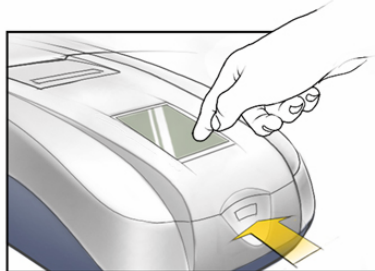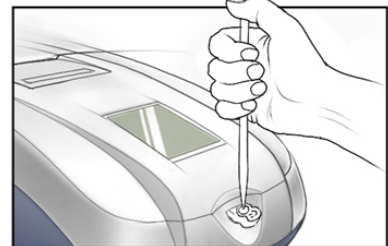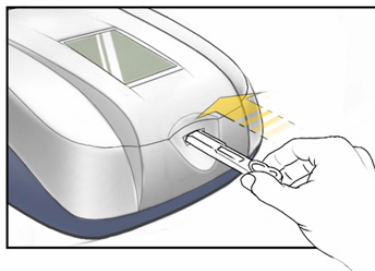
Conclusion

Incorporating industrial design in your product development process is just the first step. Knowing why, when, how, and how much industrial design to incorporate will be key to its effectiveness. In part two of our Understanding Industrial Design series we will discuss the benefits of using industrial design, and in part three we will explore how one can maximize their investment in industrial design by getting the most value from their industrial design budgets.

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Lathrop Celebrates 30 years of Success

Lathrop has been providing top notch design and engineering services since its founding in 1982.

Upcoming Events

- **July 17-19, 2012 American Association for Clinical Chemistry**

    AACC 2012 - Los Angeles CA

    Booth 2153

- **October 25-27 Association for Molecular Pathology**

    AMP 2012 - Long Beach CA

    Booth 1021

Lathrop exhibits and attends many tradeshows throughout the year across the country. Come visit us at our booth. If you cannot make it to the tradeshow, call us and we can schedule a visit while we are in your area.

LathropNEWS Preview

Topics of Upcoming Newsletters

Issue 111 Risk and Hazards

Issue 112 Part 2 of the Understanding Industrial Design Series

Issue 113 Gap Analysis

Issue 114 Part 3 of the Understanding Industrial Design Series

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