PDC

Heads-Up Design

Connecting Design Decisions Directly to the Bottom Line

Executive Summary

A heads-up[1] display, originally used in military aircraft and increasingly common in automobiles, puts a transparent view of important data directly in a user's line of sight. Heads-up displays in automobiles show a driver essential information such as speed and fuel levels on the windshield without interfering with the view. Drivers can absorb critical facts without taking their eyes off the road.

In much the same way, Heads-Up Design puts important bottom-line information transparently in front of designers so they can navigate the design process without distraction. Until now, information about the impact of everyday design decisions on profitability either has been lacking altogether or has required designers to stop design work to hunt for it, the equivalent of taking their eyes off the road.

Heads-Up Design is a new approach to synthesizing information that encapsulates price and cost considerations within the design process itself and complements and extends front-end product definition processes such as voice-of-the-customer. Product designers gain early information about the impact of everyday design decisions on profitability that ties directly back to customer needs. Because the approach is simple and requires no additional software or training, it's transparent to the design process, allowing designers to focus on design and leaders to see ahead clearly.

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[1] The term most often used is "head-up" display; we have chosen to use "head*s* up" because it's also a colloquial -- usually shouted -- warning that roughly translates into, "Look out! Something's flying through the air toward you!"

Foresightful Innovation to Improve Gross Margin

Maximizing gross margin or profitability (the difference between the cost of building a product and the price customers pay for the features delivered by the product) is a goal of most for-profit businesses. When competition or a changing business environment threaten to erode margins, companies often respond by cutting costs or raising prices. However, these seemingly sensible short-term approaches cannot form the basis of long-term future growth. Sooner or later, a competitor will undercut the price or costs will be trimmed to the bone.

Many companies recognize that the answer to improving gross margin is continued innovation. By providing ever-increasing value to customers, you keep margins high through prices that fairly represent the value customers receive. Companies have implemented voice-of-the-customer efforts or rigorous product definition to determine exactly what customers value. But many have been frustrated by the next step: how to tie customer value to the bottom line. How can you know ahead of time whether a particular innovation will positively affect profitability? Will it sell? What do you do in the meantime? Even with a relatively short product cycle, you could wait months or even years before you have the market feedback needed to analyze the impact of your decisions.

To understand whether a new product innovation will contribute to improving gross margins, you need to link everyday product design decisions directly to gross margin.

Heads-Up Design uses a new design vocabulary of price and cost to relate _price_ to features and functionality and _cost_ to implementation (hardware, manufacturing, marketing). The system then creates a _customer value curve_ that puts bottom-line decision-making power into the hands of product designers to take the guesswork out of improving gross margin. The customer value curve translates financial impact directly into terms that product designers can understand and act upon. This foresight enables everyone to see exactly how various design decisions will contribute to -- or detract from -- the bottom line.

Making the Connection to Product Design

While you may shy away from putting influence over the bottom line into the hands of design staff, the fact is that designers already make bottom-line decisions -- usually unconsciously and without understanding the impact of those decisions. Designers make technical tradeoffs every day and managers constantly allocate and reallocate time, staff, and dollars to various projects.

What if your company could make these decisions based on how much a project will contribute to profitability? Using Heads-Up Design, tradeoffs become explicit. You can evaluate design decisions based on whether the resulting product will contribute to the company achieving its targeted gross margin. Like the driver whose windshield display shows speed creeping into unsafe territory, designers and managers can respond to early information (without taking their eyes off the design process) to adjust course before committing to the wrong direction.

Establishing the Target Margin and Looking Differently at Features

The first step in applying such a system is to understand your strategic business needs in relation to the product/service portfolio you are building and set a target for the gross margin you want to achieve. You then do the front-end work necessary to determine what customers need and value, including voice-of-the-customer research and a customer-driven product definition process. The output of those activities -- a product concept, definition, and feature set -- becomes the basis for your Heads-Up Design work.

You begin to view product features differently than you may be accustomed to doing. Instead of representing products in terms of features and related benefits, Heads-Up Design looks at each feature and sub-feature of a product as embodying a discrete piece of value to the customer. Let's look at the application of Heads-Up Design in a hypothetical company that is creating a data collection and management system for use by medical staff to log in-room patient interactions. Your customer research (in the form of in-person interviews with nurses, doctors, hospital administrators, and

patients) has revealed the top needs that might be filled by such a system. You have brainstormed and translated these needs into a set of features that include:

- a simple but flexible interface,
- security,
- speed, and
- built-in error-checking.

Each of these features can be further broken down into sub-features. Looking at the product this way enables you to examine value at a very granular level. The interface, for example, includes the sub-features of:

- uncluttered data entry screens (which enables accurate data entry),
- point-and-click data entry (which minimizes the typing required), and
- configurable user profiles (which enable different users to customize and save their preferences)

Each sub-feature gets its own *customer value curve*, which directly translates what the customer will pay for different levels of designed-in performance. It embodies the idea that there is an optimum engineering specification target for each sub-feature after which returns will not be proportional to the amount of effort invested. Targets are important because *overdesign* is as much of a challenge on the road to achieving desired gross margin as is *underdesign*. Often, companies spend a lot of money designing things that the customer won't pay more to purchase.

To drive cost -- the other side of the gross margin equation -- down to the sub-feature level as you have done with price, you use the same breakdown of features you came up with initially and then look at the materials and processes required to create and deliver each feature. What portion of the sub-feature *point-and-click data entry* is implemented in each hardware and software module? That percentage, in the aggregate, determines the cost targets for every hardware and software element of the product.

The revelation of Heads-Up Design happens when you put together the two sides of the equation: the new way of examining price (what the customer is willing to pay)

and the cost (what it takes to build it). By employing a design process that accounts for both, you achieve a direct view of your gross margin on each sub-feature of the product. As your design and testing proceeds toward production, each potential change in sub-feature specification value translates directly into a change in the product's gross margin, and you can make trade-offs accordingly. You have, essentially, embedded bottom-line effects right into the design process.

Advanced Degree Not Required

Designers want to design, not spend time learning things that don't enhance their ability to create. Project managers want maximize the return on their voice-of-the customer investment throughout the design and development cycle. The beauty of Heads-Up Design is that it relies on simple tools that tie everyday design decisions back to the customers' needs. The only software required is a spreadsheet. No training is needed, just a short series of facilitated workshops.

Will Heads-Up Design eliminate competitors? No -- but it can give your company a big advantage by embedding financial success in every part of your product design.

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Contact PDC at info@pdcinc.com to find out more about how you can introduce Heads-Up Design to your company.