MAKING BETTER REQUIREMENTS

A BRIEF EXAMPLE OF FORMAL SYSTEM REQUIREMENTS

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The purpose of requirements is to clarify expectations. Requirements can be structured in the following way.

FUNCTIONS

Functions are the "what" of a product, describing what the product is to accomplish. They are often verbs, representing what the product is supposed to do.

To test for function, try putting the phrase "We want the product to…" or "The product should…" in front of it.

Attributes (see below) such as colors, sizes, performance are not functions.

> 1. *Superchalk should write on slate (**E**)*
>
> 2. *Superchalk should satisfy our customers (**E**).*
>
> 3. *Superchalk should be easily manufacturable (**H**).*

Functions can be grouped into three broad classes:

1) **E** for Evident – are visible or evident to customers.

2) **H** for Hidden – as imperceptible to customers as possible.

3) **F** for Frill – desired if possible without too much extra cost or time.

ATTRIBUTES

Attributes are characteristics desired for the product. They are often adjectives or adverbs. There are "attributes" (e.g. color) and "attribute details" (e.g. red, green, …). Attributes do not stand alone, but modify one or more functions. Use this format:

Attribute A of Function F = (list of attribute details)

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1. *Superchalk should write on slate (**E**)*

2. *Superchalk should satisfy our customers (**E**).*

a. *User-friendly of satisfy our customers = (non toxic, clean) (**M**)*

b. *Color of satisfy our customers = (white, red, yellow, green) (**W**)*

3. *Superchalk should be easily manufacturable (**H**).*

a. *Shape of easily manufacturable =(cylindrical, one-size) (**M**)*

b. *Composition of easily manufacturable = (pure chalk) (**M**)*

Attributes can be classified into three broad classes:

4) **M** for Must – the product must have.

5) **W** for Want – desired for the product.

6) **I** for Ignore – anything the designers can effectively ignore.

CONSTRAINTS

A constraint is a mandatory condition placed on an attribute. For a product to be complete, all it's **E** and **H** functions must be present with all **M** attributes and with all their constraints satisfied.

Constraints are boundaries for the possible product design. Constraints are required only when necessary to clarify the attribute (not all **M** attributes need have constraints). Constraints may be used to create test plans.

3.a.1. The length is between 1 and 5 cm.

3.a.2. The diameter is between .3 and 1.0 cm.