Quantitative market research for incremental improvement innovations

Professor Eric von Hippel

MIT Sloan School of Management

Incremental innovation is important. Quantitative market research can identify needs for incremental change

Major new product lines are rare – incremental improvements are by far the most common type of project in product and service development. So it is important to learn to do incremental innovation well.

Examples:

- *Many* incremental improvements to 3M transparent “Scotch” tape over the years. Convenient tape dispenser; decorated “gift wrap tape,” write-on tape, double-sided tape.

- *Many* incremental improvements to aspirin over the years. Buffered aspirin, coated, child-sized tablets, liquid formulation, time release capsules…

There are several ways to generate ideas for incremental product and service improvements

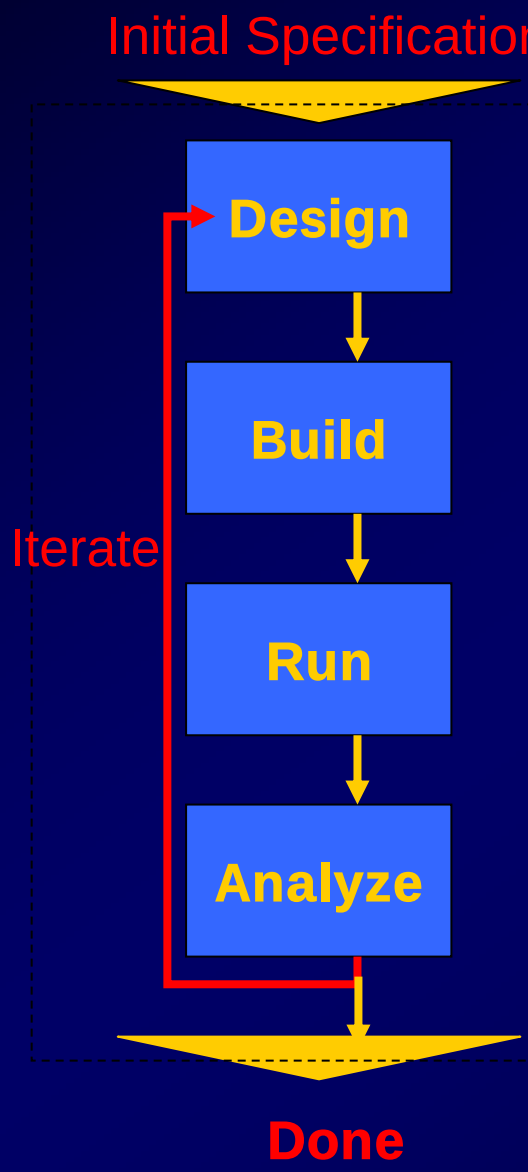
- Observation of users: “Many users are using / modifying our products *this* way – let’s add that feature for them.”
- Sales channel inputs: “My customers are asking for masks in pediatric sizes – I said we could do that for them.”
- “Me too / me better: “Competitors are getting good sales with their pancake mix with fruit added – lets do fruit *and* nuts!”
- Traditional quantitative marketing research.

Traditional quantitative marketing research is *designed* to identify only incremental needs (but not always understood to have that in-built bias).

Traditional market research focuses on ***target*** market customers

1. What need information do target market customers have?
2. How do you get information from them?
3. How do you analyze their information?

In traditional market research trial and error is being done – but manufacturers rather than users are doing it



- Mfr-based designers design a product based on user need
- Mfr builds a prototype
- Does market tests
- Analyzes – finds areas for improvement.

A typical target market

Target market users have need but not solution information. Example: PCB-CAD study

Target market customers have *need information* - *not solution information* to offer market researchers

For more information on this study, see:

Urban, Glen L., and von Hippel, Eric. *Lead User Analyses for the Development of New Industrial Products*. *Management Science* 34, no. 5, May 1988: pp. 569-82.

The needs of target market customers are “fixed” on the “middle of the road”

“Functional fixedness” says that people don’t stray much from the needs and solutions they *directly* experience.

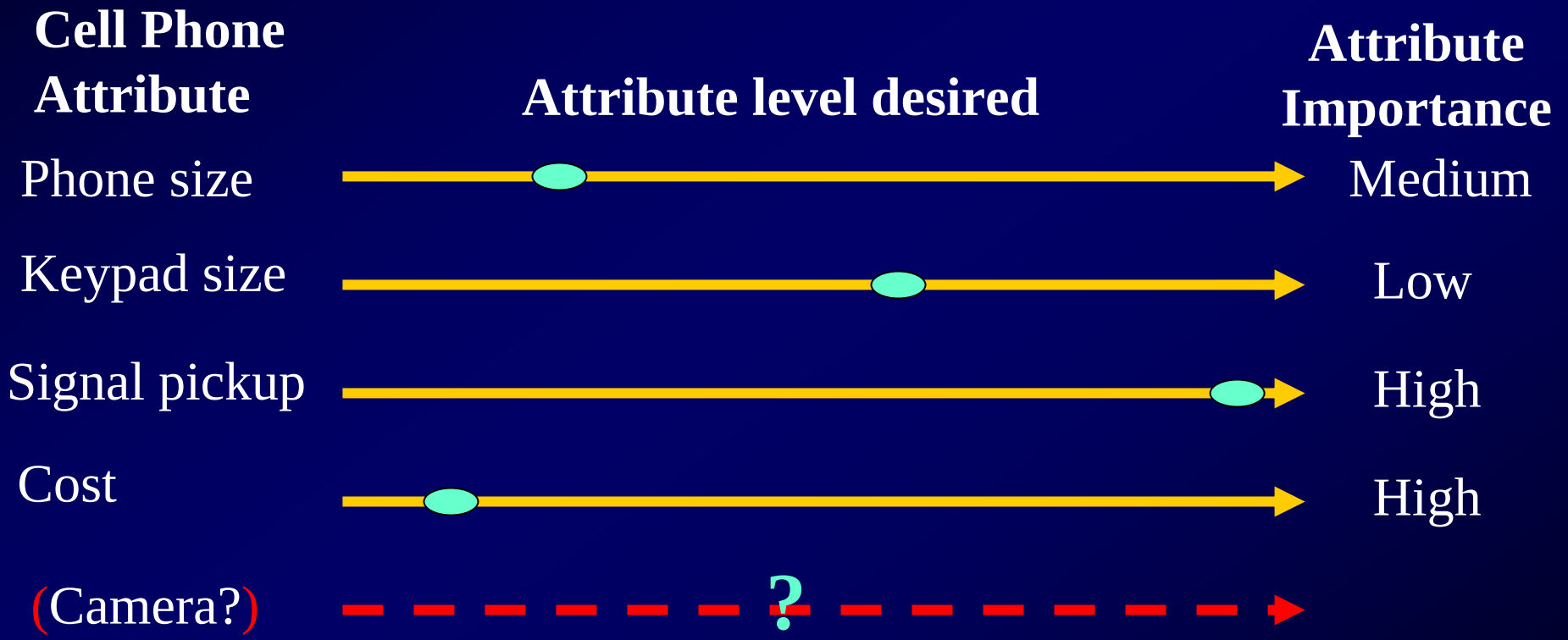
How quantitative market research gets information on needs from target market customers

- The process starts by identifying 10-30 product attributes target market customers think are important for a type of product (say, a cell phone). Usually, a focus group is used to identify these.

- This procedure creates a barrier to out-of-the-box innovation. If an attribute is not listed by ordinary users – it cannot enter into later analytical steps. For example, if camera functionality is not listed as a cell-phone attribute – it is gone!

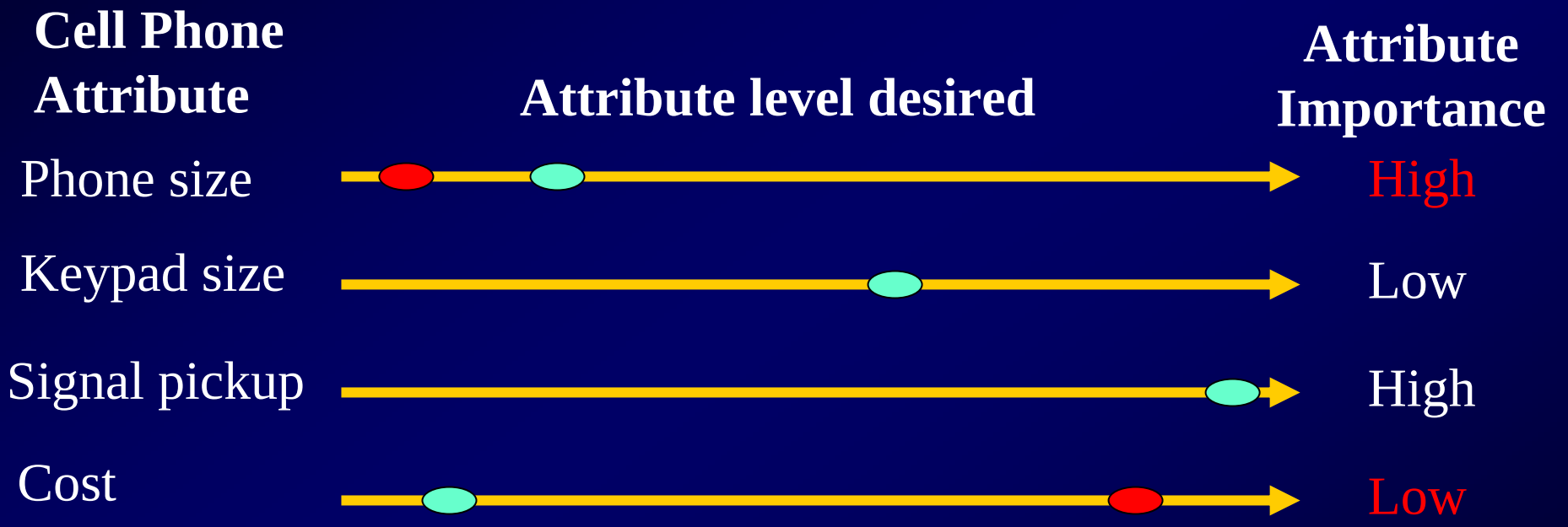
Analysis centers on product attributes that *many* target users describe as important

(Rarely mentioned attributes are dropped as outliers)



This type of analysis leads directly to DOM improvements along Commonly-understood attributes = incremental innovation

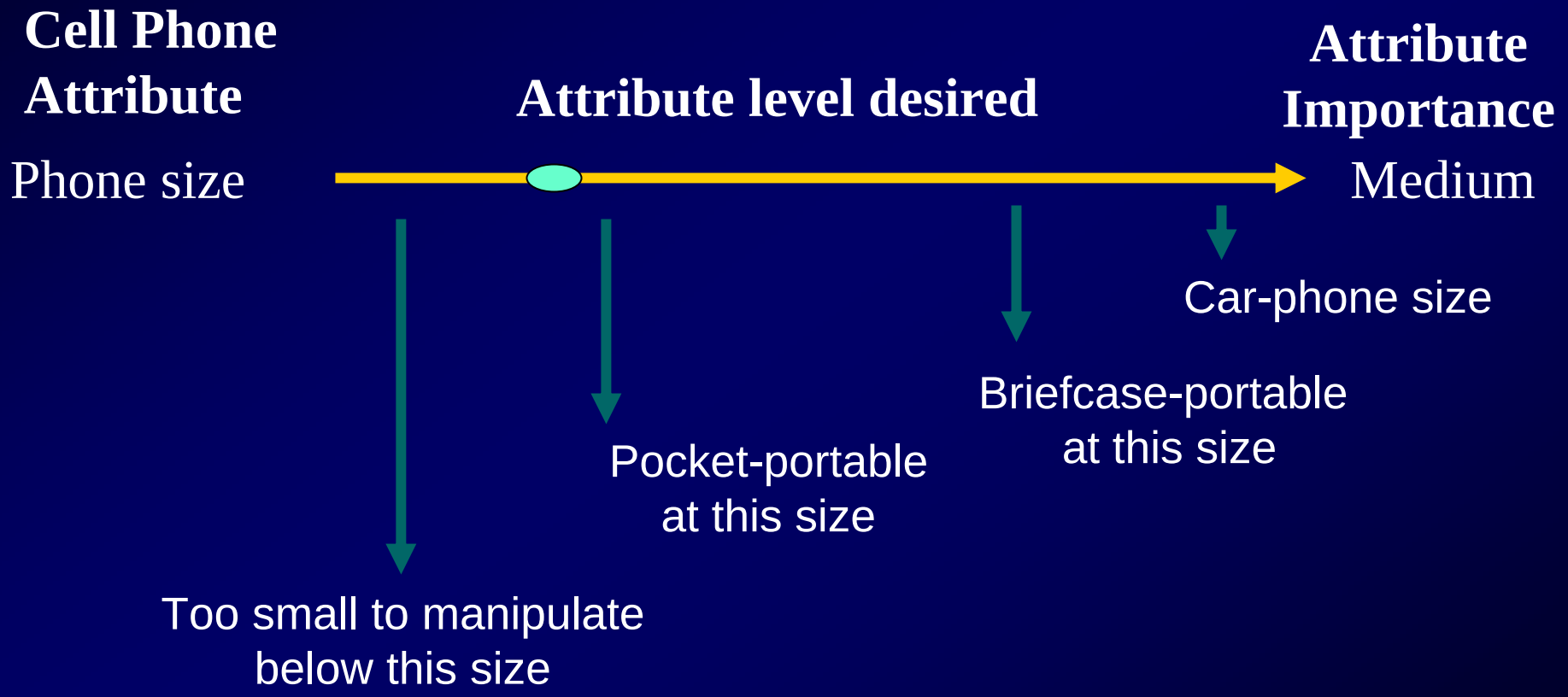
A few market segments with *common* weightings are identified – mass manufacturers want to "build for the masses."



Cost-conscious segment

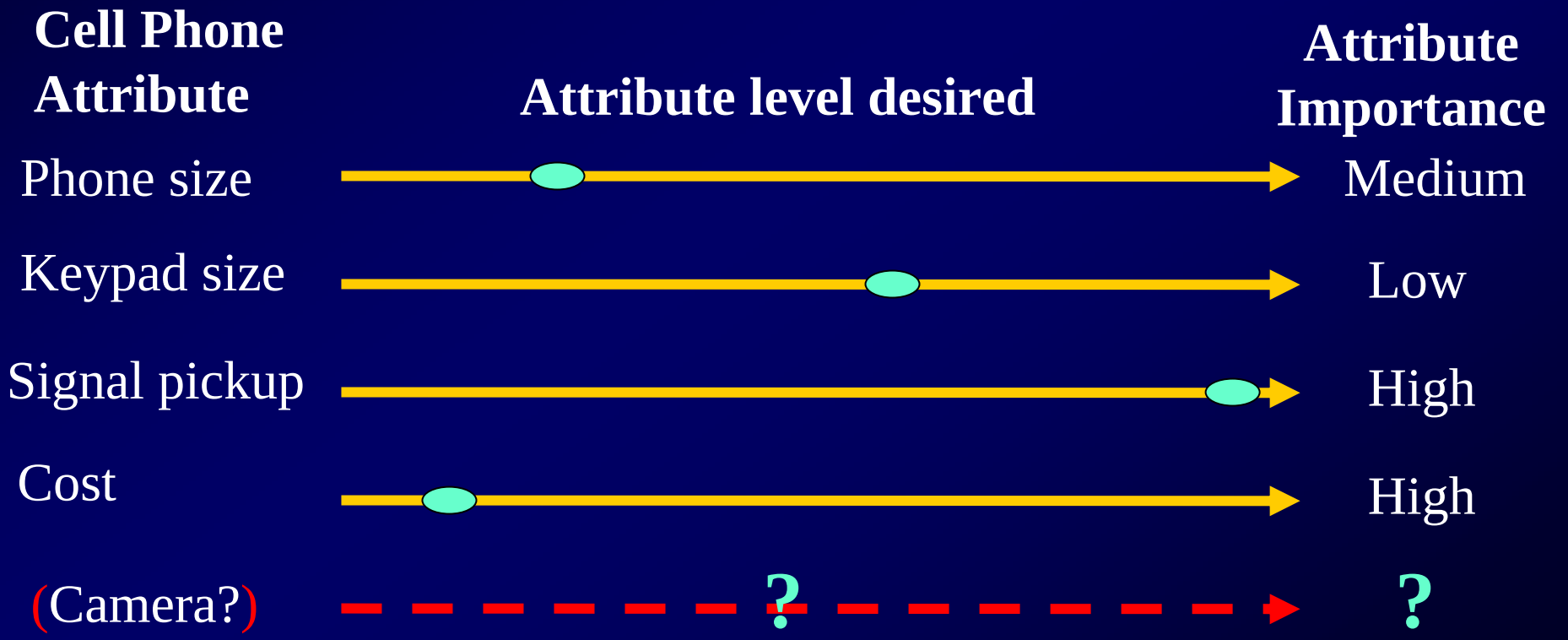
Luxury segment

Even for incremental products quantitative analyses can mislead. Example: it is assumed that preferences for each factor vary linearly - often not true!



What happens when these methods are used to quantify *existing demand for* familiar vs unfamiliar ideas *after* they have been developed?

How would "functionally fixated" consumers assess cell phone cameras?



In sum: aspects of traditional methods that create a focus on *incremental* improvements

Focus on:

- "Center of the market" customers
- Improvements only along attributes *known to be important* by target market customers for a product category

Possible question for a paper:

- Can quantitative methods be modified in some way to enable the generation of major new innovations?

Firms organize around the way they ***think*** idea generation works

(For this diagram, see: von Hippel, Eric. *Users as Innovators*. Cambrdige, MA: *Technology Review* 80, no. 3, January 1978, pp. 31-39.)

Contrasting innovation methods

Need and market life cycle curve

New methods are based on finding ***emerging needs*** among lead users. These lead users may also develop *solutions*.

Traditional methods are based on finding ***needs*** among target market Users.
Manufacturers then develop solutions