

Electronic Business Systems

School of Engineering & Design

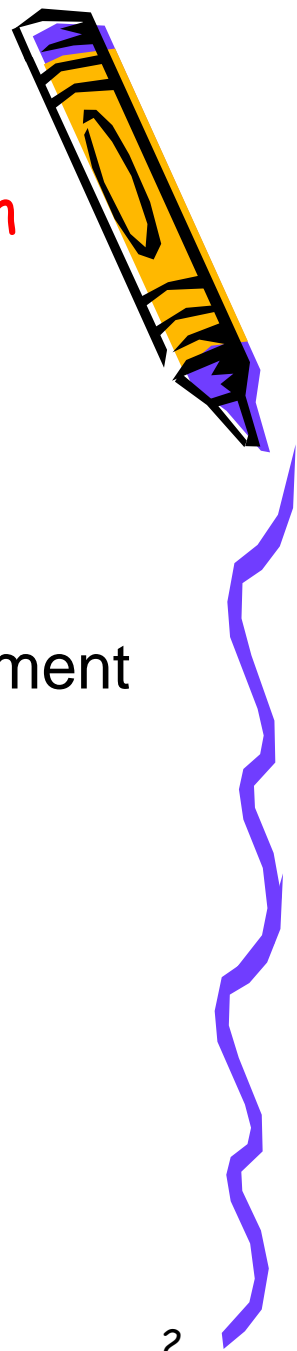
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<http://www.brunel.ac.uk/~emstaam/>

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E-Business: Product & Service Customisation



- Market research
- Customer Oriented product and service development
- Customer Optimisation Route and Evaluation (CORE)
- SatisticaTM

Customer Satisfaction

User requirements and perceptions will **vary widely** across the target market from customer to customer, they will vary with **time** and they will usually be influenced by **competitor's products**.

This multi-dimensional dynamic tangle of information must be analysed as an on-going process in order for it to be of practical value.

Market analysis is not confined to customer input and feedback. It should involve **gaining awareness** of all factors influencing the market in which a company operates such as: **competitors, suppliers, economic, technological, legal**, among others.

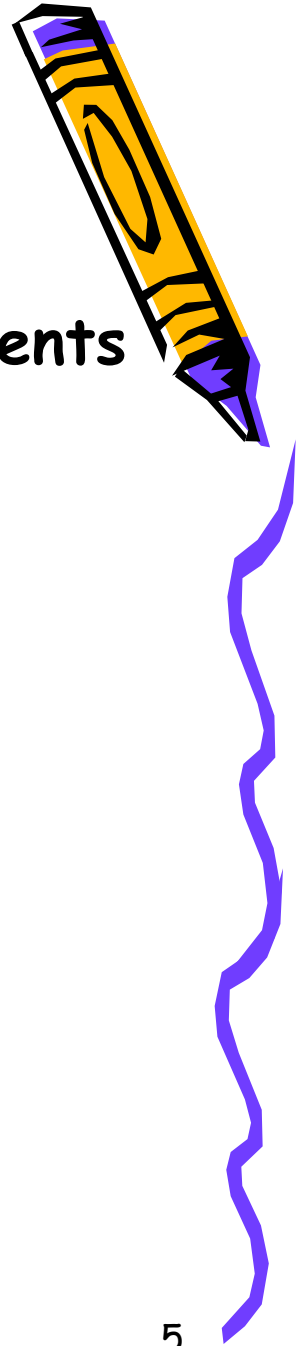


Our Focus



**Embedded Customer Satisfaction
Evaluation and Analysis Tool for improved
Products & Services**

M&E Businesses



- In best position to embed **Customer requirements** and satisfaction in their e-Proces
- Only **suitable data acquisition and analysis** platform will truly make the right impact

Voice of Customer (VOC)



What do we mean by customer ?

The purchaser – the decision maker – the influencer – or all of them ?

Reasonable way to tackle: if possible gather information from a wide spectrum.

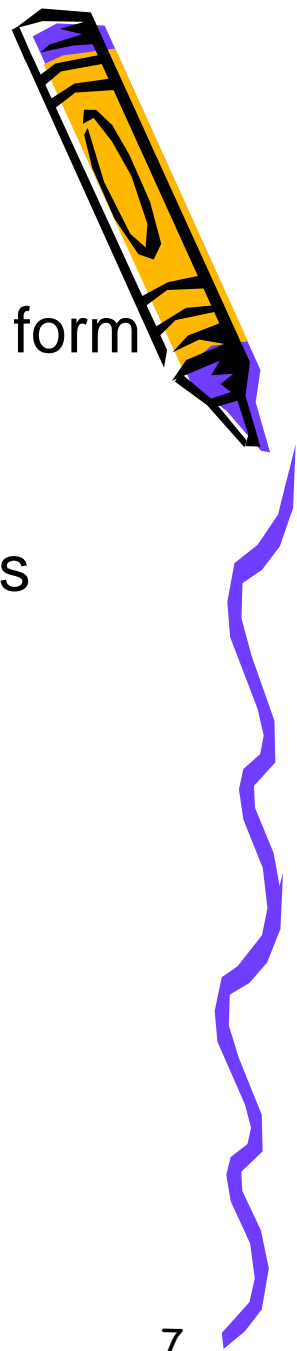
Gather knowledge through listening to customers, to piece together an overall picture (VOC)

Market Research - Feedback forms

Seeking customer perception and feedback should form the basis for decision making.

Questionnaires are popular source of information as they are:

- Easily distributed
- Like by like comparison
- Easy processing
- Economical exercise
- Web enabled



Some concerns

- Scales are prone to positive bias – particularly point systems (e.g. 1-10 rather than good-bad)
- Numbered scale is left more open to various interpretations than verbal (e.g. rating of 7 out of 10 is considered "satisfactory")
- Scales without midpoint is even more prone to positive bias
- For a verbal scale, answers may be rated as subjective (e.g. "satisfied") or objective (e.g. "good"). Empirical studies show that objective scales produce more realistic results.

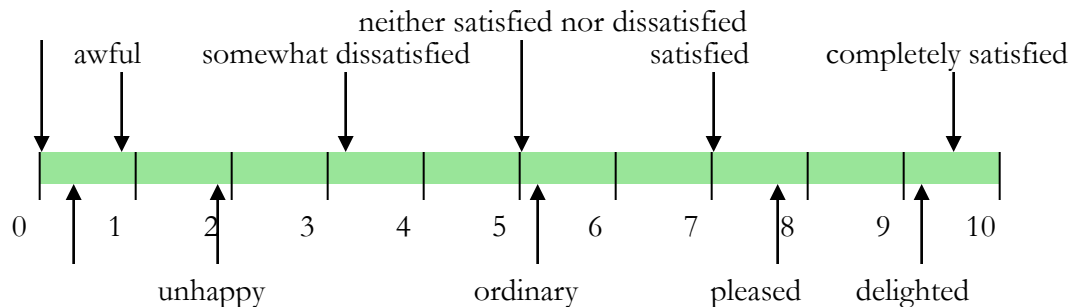
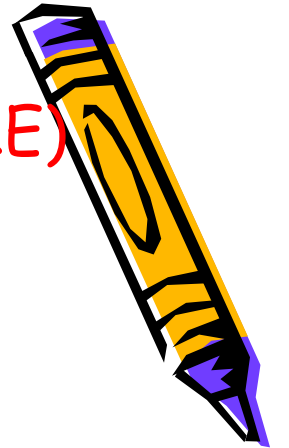


Figure 6.1: How people may place response categories on a scale of 0-10

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Customer Optimisation Route and Evaluation (CORE)



The consumer market is:

- evolving at an incredible rate,
- competition is getting fiercer,
- catalysed by technological developments improving business capability.

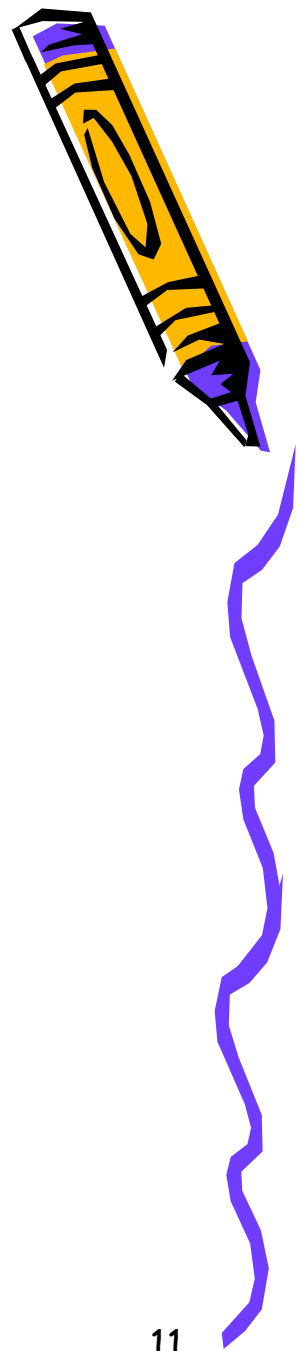
Where many consumer-centric initiatives fail is the integration of **real-time knowledge** of user requirements and adapting their daily business processes accordingly.

CORE (1)



Customer Optimisation Route and Evaluation (CORE) is a mathematical modelling tool designed to **bridge the divide between customers and product designers** in pursuit of **maximising potential customer satisfaction**. By translating customer's **qualitative requirements** into **technical design attributes**, satisfaction to the product as a whole and its constituent elements may be attained. Hypothesis testing, using the model, would prioritise areas for improvement.

CORE (2)



1. Customer Led
2. Quantifiable approach
3. Systematic method
4. Post & Pre Purchase feedback
5. Product selection
6. Bespoke product design
7. Preliminary order analysis
8. Mass market product design
 - Proactive not reactive
 - More than just a reporting mechanism
 - Application specific
 - Integral part of business process
 - Quantifying satisfaction – Quality assessment

1. Customer Led



By using data gathered directly from customers as the input to a decision making tool, information integrity is ensured. As CORE provides a common language between customers and designers, there is no intermediary translation stage where facts can become blurred with management's interpretation or influence.

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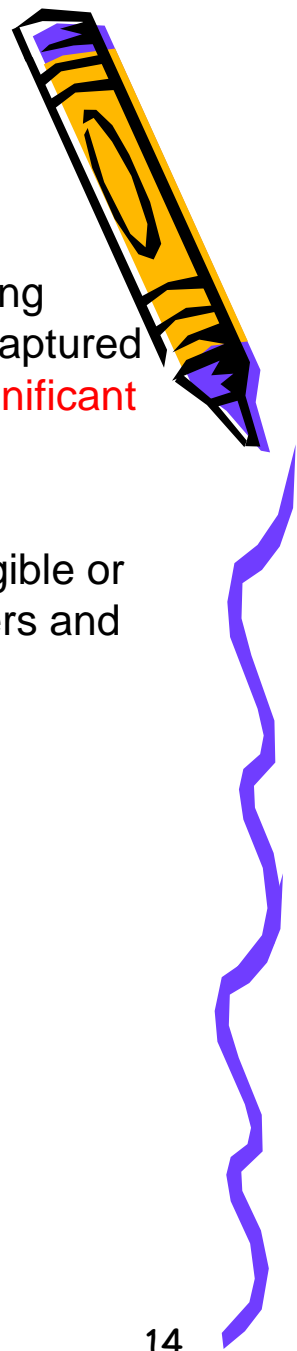
2. Quantifiable approach



Whereas other customer-focused methods rely largely on subjective opinions, translating this into coherent numerical form enables more rapid analysis, saving time in the development cycle. It also provides meaningful data on which to rate current success, but more importantly, make future improvements.

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3. Systematic method



- Core takes an orderly approach to the data retrieval process. By combining attributes of interest with appropriate weighting factors, all data may be captured and used in a manner consistent with its significance. It avoids the “insignificant many overshadowing the significant few” syndrome.
- Any product may be broken down into constituent attributes, be they tangible or intangible. These may be identified from the perspective of both designers and customers and a numerical variable assigned to each.

$$\varepsilon_{ij} = -abs\left(\frac{v_i - v_{ij}}{v_{ij}}\right)$$

i: product attribute

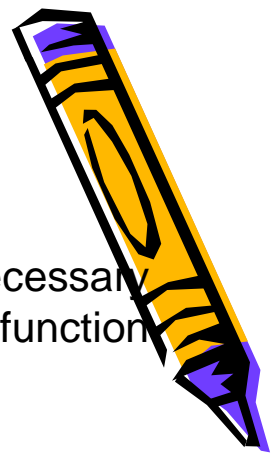
j: customer

v_i : actual design value for attribute i

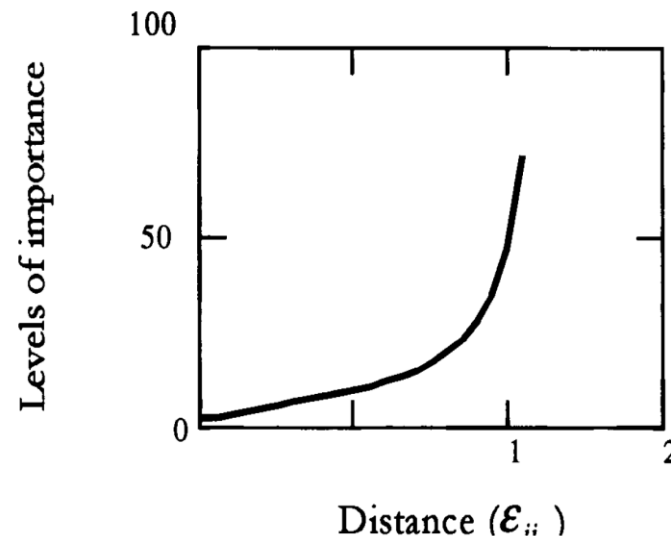
v_{ij} : ideal design value for attribute i and customer j

ε_{ij} : distance between actual design value and ideal

Dynamic Levels of Importance



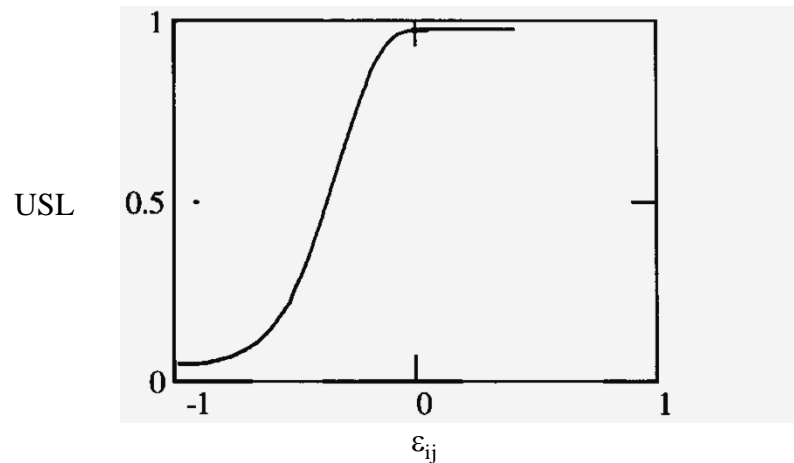
In addition to the value customers associate with a product attribute it is necessary to consider the importance they place on that attribute. The importance is a function of the ideal/actual deviation as previously calculated, $\alpha_{ij} = g(\varepsilon_{ij})$.



Relationship between levels of importance i for customer j , α_{ij} , and the absolute value of distance between actual design and expected value, ε_{ij}

User Satisfaction Level (USL)

Assessing the Users Satisfaction Level (USL) to the whole product is a function of both deviation of actual from ideal values and importance weighting



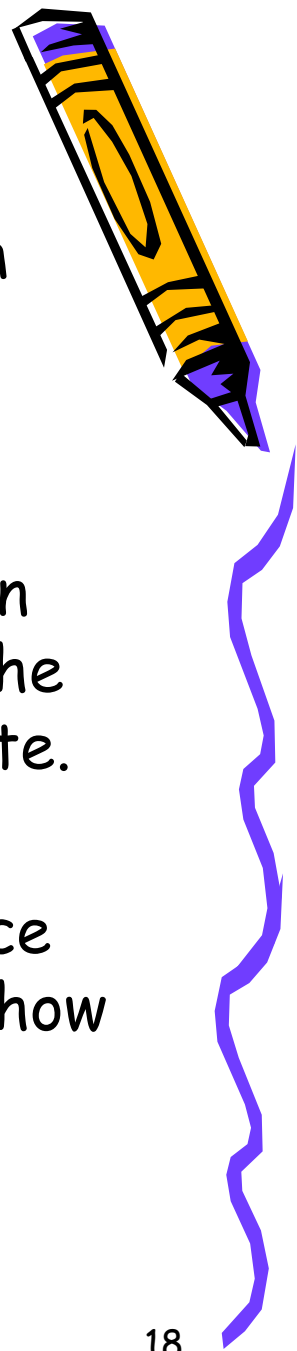
Users satisfaction level based on the deviation between actual and design values.

Satistica



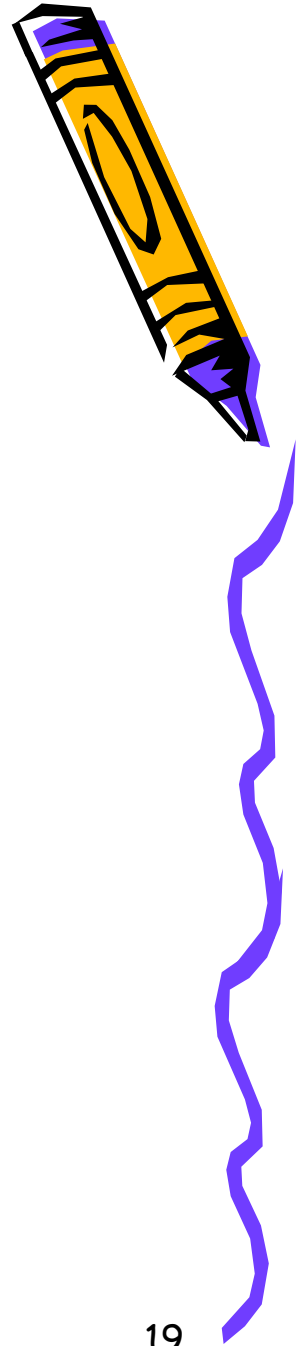
Figure 6.4: Satisfaction calculation and Mountain Climbing

Unique Features of the Model



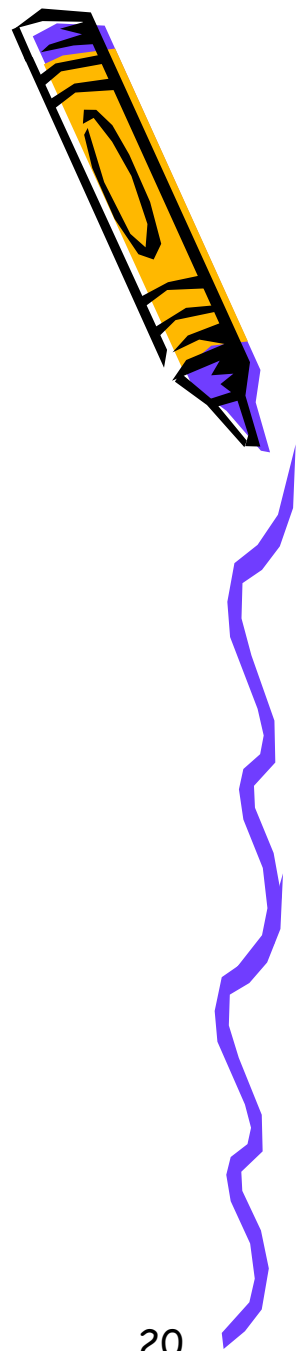
1. The unique mathematical model and algorithm used in satistica™ is called "*Customer Optimisation and Route Evaluation*" (**CORE**).
2. **CORE** measures the level of satisfaction of an attribute based on the difference between the expected and the desired value of an attribute.
3. Regardless of the nature of product or service **CORE** needs three specific input to measure how a product or service attribute satisfies expectations.

Two Model Variables



- The **Expected (Target or Ideal) Value**
- The **Actual (Perceived)**

SATISTICA



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