ANÁLISE DE VALOR

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Análise de Valor

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Value Analysis

→The primary objective of value analysis is assess how to **increase the value** of an item or service **at the lowest cost** without sacrificing quality.

"In such a fast-paced environment, product development must be transformed into a continuous, iterative, learning process **focused on customer value**."

-***Turning New Product Development into a Continuous Learning,***

David Hughes & Don Chafin

Value Analysis: Definition

”A philosophy implemented by the use of a specific **set of techniques**, a **body of knowledge**, and a **group of learned skills**.

It is an organized creative approach which has as its purpose the efficient identification of unnecessary cost, i.e., cost which provides neither quality, nor use, nor appearance, nor customer features."

Lawrence Miles, 1946, General Electric Co.

Value Analysis

1. Value Analysis is a systematic, formal and organized process of analysis and evaluation. It is not haphazard or informal and it is a management activity that requires planning, control and co-ordination.

2. The analysis concerns the function of a product to meet the demands or application needed by a customer. To meet this functional requirement the review process must include an understanding of the purpose to which the product is used.

NickRich, J. (2000). Value Analysis, Value Engineering. *INNOREGIO Project*.

Value Analysis

3. Understanding the use of a product implies that specifications can be established to assess the level of fit between the product and the **value derived by the customer** or consumer.

4. To succeed, the formal management process must meet these **functional specification** and performance criteria consistently in order to give **value to the customer.**

5. In order to yield a benefit to the company, the formal review process must result in a **process of design improvements** that serve to lower the production costs of that product whilst maintaining this level of value through function.

Value Analysis

- Examination of the function of parts and materials in an effort to reduce cost and/ or improve product performance.

- The value analysis technique supported cost reduction activities by relating the cost of components to their function contributions.

NickRich, J. (2000). Value Analysis, Value Engineering. *INNOREGIO Project*.

Value Analysis

- As VA progressed to larger and more complex products and systems, emphasis shifted to “upstream” product development activities where VA can be more effectively applied to a product before it reaches the production phase.

NickRich, J. (2000). Value Analysis, Value Engineering. *INNOREGIO Project*.

Value Analysis: Cost and Value

Any attempt to improve the value of a product must consider **three elements:**

- the use of the product (known as **Use value**)- how useful/functional the product is seen to be.
- second source of value comes from ownership (**Esteem value**). The value the customer/user gives to product attributes, not directly contributing to utility but more related to **aesthetic value** and **subjective value**.
- **Market value-** what market is prepared to pay for the product. (Utility value+Esteem value)

Value Analysis: Cost and Value

***Example**: This can be shown as the difference between a luxury car and a basic small car that each has the same engine. From a use point of view both cars conduct the same function – they both offer safe economical travel (**Use value**) – but the luxury car has a **greater esteem value**. The difference between a gold-plated ball pen and a disposable pen is another example. However, use value and the price paid for a product are rarely the same, the difference is actually the esteem value, so even though the disposable pen is priced at X the use value may be far less. Example:APPLe*

The Focus of VA

The **key focus** of the VA approach is therefore the management of ‘functionality’ to yield **value for the customer**.

NickRich, J. (2000). Value Analysis, Value Engineering. *INNOREGIO Project*.

Why Use VA

- **Within Business**

- Best practice
- Technology that has been replaced
- Traditional thinking and customary practice
- The designer, under time pressure to create designs for immediate production and sale
- Products with known problems that
- Customer Demands.
- …..

- **Market for the product or servisse**

- Pricing Practice
- The Advent of E-Commerce
- Reducing Complexity.
- New Technology and Materials.
- Environmentalism
- ……

Types of VA

- VA for Existing Products
- VA for New Products
- VA for Product Families- Horizontal Deployment
- Competitive VA

NickRich, J. (2000). Value Analysis, Value Engineering. *INNOREGIO Project*.

THE VA-TERMINOLOGY

- **Need** : These are users expectations, may be expressed explicitly, or may be latent.
- **Value :** Value is an imprecise word, its meaning depends both on the user and on the context. For example a typewriter ribbon or a word – processing package may have good value while the typewriter or computer may not have.
- In an engineering context the distinction can be important, as any cosmetic changes brought about by Value Analysis or by means of any other technique are waste of time if the total product is unacceptable to the market.
- **Value** is a quantity, which enhances customer satisfaction or slashes the expense attributable to the product

NickRich, J. (2000). Value Analysis, Value Engineering. *INNOREGIO Project*.

THE VA-TERMINOLOGY

Different customers will interpret the value

of a product in different ways.

- The “performance of its functions” could include that it is beautiful (where needed) or it lends an image to the user / possessor (where **desired**).
- Its common characteristic is a high level performance, capabilities, emotional appeal, style, etc. relative to its cost.
- This can also be expressed as maximizing the function of product relative to its cost :

  Value = (performance + capability / cost= Function / cost

NickRich, J. (2000). Value Analysis, Value Engineering. *INNOREGIO Project*.

THE VA-TERMINOLOGY

- Value analysis defines a “basic function” as anything that makes the product work or sell. A function that is defined as “basic” cannot change.

- Secondary functions, also called “supporting functions”, described the manner in which the basic function(s) were implemented. Secondary functions could be modified or eliminated to reduce product cost.

THE VA-TERMINOLOGY

- A function should be identified as to what is to be accomplished by a solution and not how it is to be accomplished. How the function is identified determines the scope, or range of solutions that can be considered.

- Secondary functions are incorporated in the product as features to support and enhance the basic function and help sell the product. The elimination of secondary functions that are not very important to the customer will reduce product cost and increase value without detracting from the worth of the product.

THE VA-TERMINOLOGY

- Value is not a matter of minimizing cost.
- In some cases the value of a product can be increased by increasing its function (performance or capability) and cost as long as added function increases more than its added cost.
- The concept of functional worth important.
- Functional worth is the lowest cost to provide a given function.
- However, there are **less tangible** "selling" functions involved in a product to make it of **value to a customer**.

APPLICATIONS OF VA

1. Enables people to pinpoint areas that need attention and improvement.
2. Provides a method of generating ideas and alternatives for possible solutions to concern.
3. Provides a means for evaluating alternatives. .
4. Allows one to evaluate and quantify intangibles and to compare apples with oranges.
5. Provides a vehicle for dialogue by allowing large amounts of data to bevsummarized in concise form, allowing new and better questions to be asked, and using numbers to communicate in an information-searching mode.
6. Documents the rationale behind recommendations and decisions.
7. Materially improves the value of goods and services.

APPLICATIONS OF VA

8. **Some application areas are** - Defense; Automotive; Aeronautical; Software development; Water treatment; Civil engineering; systems and procedures, venture analysis, forecasting, resource allocation, marketing, Client services; Work processes; Documentation; Organizational

development; etc.

9. **Customer satisfaction and value perception** -- The most common application of Value

Analysis is what many have called the "state – of – the – art " customer satisfaction and value

perception study. Here are some of the ways the study pays off for clients:

They need to be competitive on the "Basics" (high satisfaction/low value) – not allowing any weaknesses in, but not investing more than necessary in them. .

They need to dominate the "Value" Issues (high satisfaction/high value). .

They need to know the Value "Opportunity" Issues (low satisfaction/high value) to know what to invest in for future growth.

They need to know the "Irritations" (low satisfaction/low value) to know where to innovate.

APPLICATIONS OF VA

10. **Identifying At Risk Customers** - A big issue today is the so-called "At Risk" customer (those likely to defect).

Value Analysis findings help to determine why a company's customers are At Risk.

And, firms can learn why major competitors' customers are At Risk so they can be targeted.

11. **Increasing Employee Loyalty** - Value Analysis studies are conducted among employees to identify things they expect from any company they work for (The Basics), things they value, things that irritate them and things they don't care about.

12. **New Product / Service Development** - Every marketer has been involved in a study where consumers "say" they are "very interested in trying a new product which subsequently fails in the marketplace.

APPLICATIONS OF VA

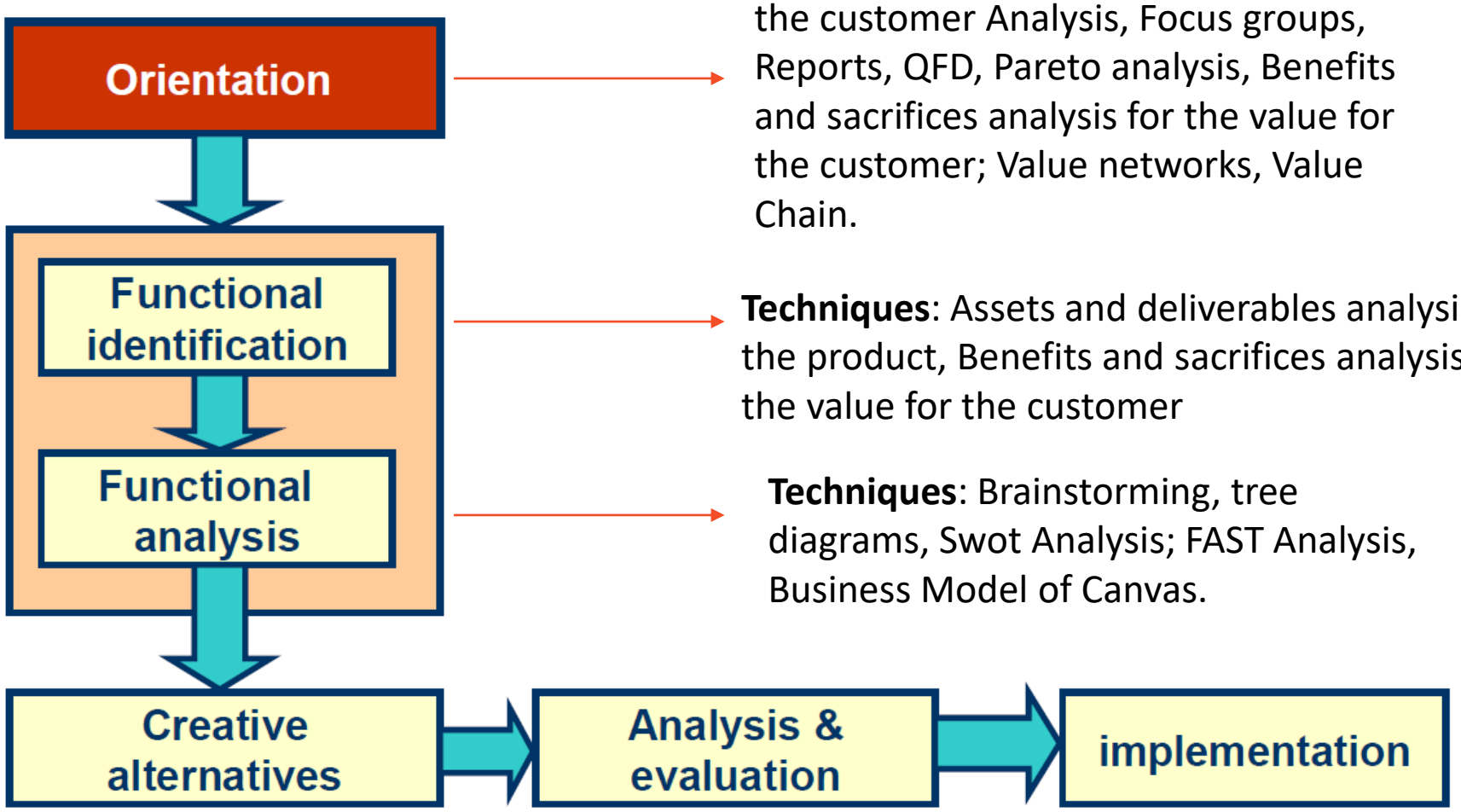
13. **Failure** is often considered the consumer's fault whereas
it really results from asking the wrong question.

14. People don't buy what they are "interested" in, they but **what they value**.

15. The reason most new products fail is that they don’t provide enough "new value" to consumers.

16. **Value Analysis** will show **which tangible and intangible**
aspects of a new product consumers value and which
they do not care about

The VA Process



Techniques: Market Survey, Value for the customer Analysis, Focus groups, Reports, QFD, Pareto analysis, Benefits and sacrifices analysis for the value for the customer; Value networks, Value Chain.

Techniques: Assets and deliverables analysis of the product, Benefits and sacrifices analysis for the value for the customer

Techniques: Brainstorming, tree diagrams, Swot Analysis; FAST Analysis, Business Model of Canvas.

Techniques: Brainstorming, rank the functions by pair wise comparision

Techniques: AHP TOPSIS, Graph Theory

The VA Process

Orientation

- **Forming the Value Analysis Team (designers; manufacturing engineers and production engineers; purchasing specialists; operational staff;**

- **An Extended Team Approach: Customers; Suppliers and subcontractors;**

  - **Selecting the Product**

The VA Process

Useful Techniques for team orientation:

- Tour of the facility to understand and map the process of design to manufacturing; (value network or value chain)
- Visits to selected customers to understand the use and value of the product for the customer. A tour of the customer facility should be conducted, interviews of key personnel at the customer site and an understanding of the current problems and future. (value for the customer)
- r• Team building exercises can include short presentations of the role of each department by team members.

Maths versus Marketing

Customers are your most valuable asset; only customers create value for your business.

Mark Klein (2008)

- science of predictive analytics
- is the process of marketing to existing customers based on a scientific understanding of how past customer behaviour predicts future purchases.
- our focus is on existing customers
- you should be adding new customers steadily.

Fuzzy Front End: Effective Methods, Tools, and Techniques

Peter Koen Model

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Fuzzy Front End

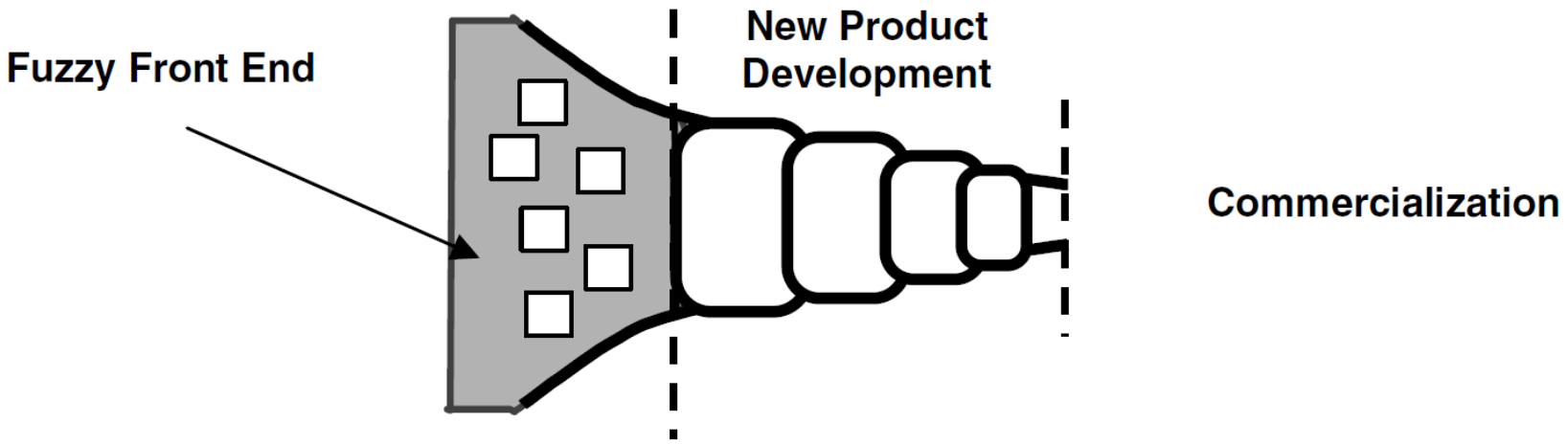


FIGURE 1-1. The entire innovation process may be divided into three parts: fuzzy front end (FFE), new product development (NPD), and commercialization.
The division between the FFE and the NPD is often less than sharp, since technology development activities may need to be pursued at the intersection.

Difference Between the Fuzzy Front End (FFE) and the New Product Development (NPD) Process

	Fuzzy Front End (FFE)	New Product Development (NPD)
Nature of Work	Experimental, often chaotic. "Eureka" moments. Can schedule work—but not invention.	Disciplined and goal-oriented with a project plan.
Commercialization Date	Unpredictable or uncertain.	High degree of certainty.
Funding	Variable—in the beginning phases many projects may be "bootlegged," while others will need funding to proceed.	Budgeted.
Revenue Expectations	Often uncertain, with a great deal of speculation.	Predictable, with increasing certainty, analysis, and documentation as the product release date gets closer.
Activity	Individuals and team conducting research to minimize risk and optimize potential.	Multifunction product and/or process development team.
Measures of Progress	Strengthened concepts.	Milestone achievement.

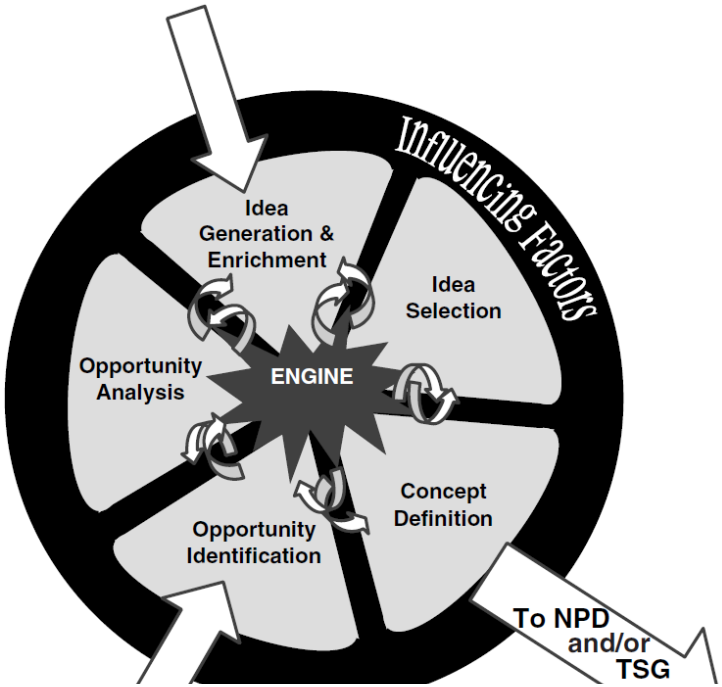
DEFINITIONS

Opportunity: *A business or technology gap, that a company or individual realizes, that exists between the current situation and an envisioned future in order to capture competitive advantage, respond to a threat, solve a problem, or ameliorate a difficulty.*

Idea: *The most embryonic form of a new product or service. It often consists of a high-level view of the solution envisioned for the problem identified by the opportunity.*

Concept: *Has a well-defined form, including both a written and visual description, that includes its primary features and customer benefits combined with a broad understanding of the technology needed.*

New Concept Development Model



The new concept development (NCD) construct is a relationship model, not a linear process.

It provides a common language and definition of the key components of the fuzzy front end (FFE). The engine, which represents senior- and executive-level management support, powers the five elements of the NCD model. The engine and the five elements of the NCD model are placed on top of the influencing factors. The circular shape of the NCD model is meant to suggest that ideas and concepts are expected to iterate across the five elements. The arrows pointing into the model represent starting points and indicate that projects begin at either opportunity identification or idea generation and enrichment. The exiting arrow represents how concepts leave the model and enter the new product development (NPD) or technology stage gate (TSG) process.