

5G - Model for Stakeholder Value Engineering

in Software System Design, Development and Delivery

by

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What is Stakeholder Value

$$\text{Stakeholder Value} = \frac{\text{Benefits} - \text{Sacrifices}}{\text{Costs}}$$

....it reflects the trade off between “gets” and “gives” that lie at the root of value

Who are Stakeholders

Stakeholders include all entities (animate or inanimate) who are part of :

- product design and development
 - product marketing and sales
 - product support and maintenance
 - product purchase / buyers
 - product usage / users
 - product usage environment
- } Providers
- } Customers

Product Value

FEATURES

....by themselves are of no Value



ADVANTAGES



BENEFITS

*Value is realized
by stakeholders
only when
product features
result in
tangible
advantages and
tangible benefits
to them in a
given context*

Stakeholder Value Perceptions



Value Engineering



Anticipating and Understanding Stakeholders' Value Perceptions

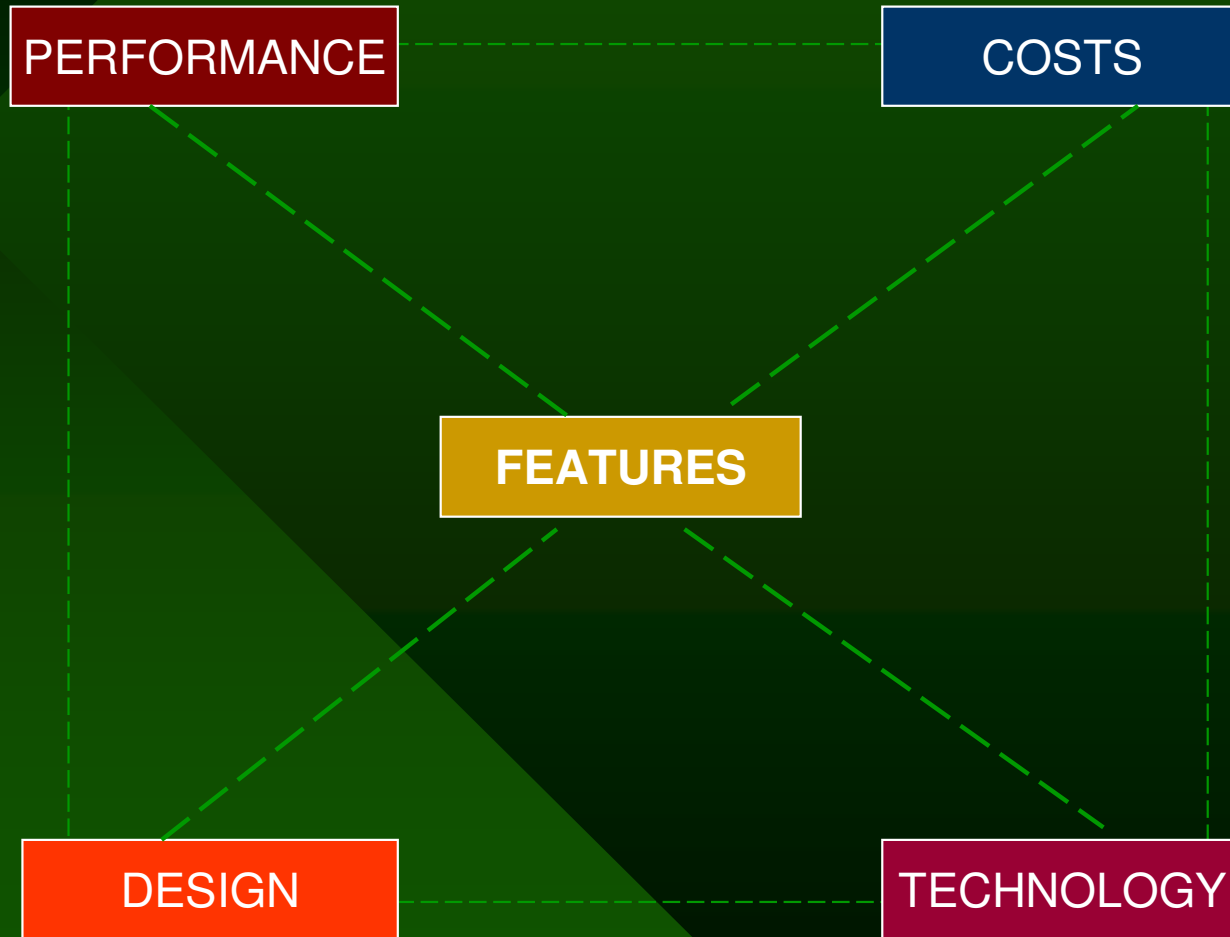


Engineering “intent of benefits” in the Product Features to meet Value Expectations by Design



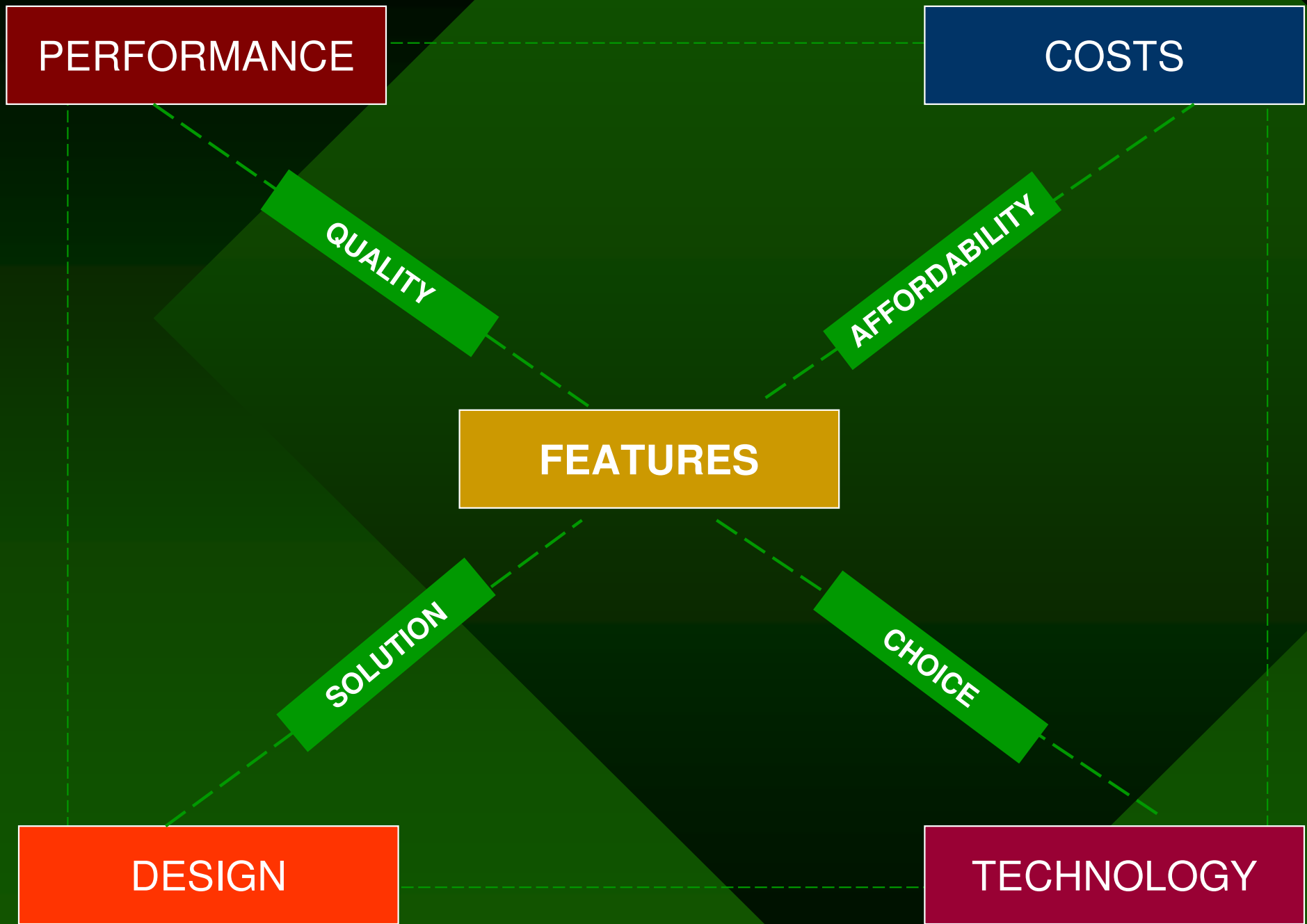
Delighting Stakeholders by ensuring Benefit Realization. “No cure, no pay”. Design to exceed their Value Expectations.

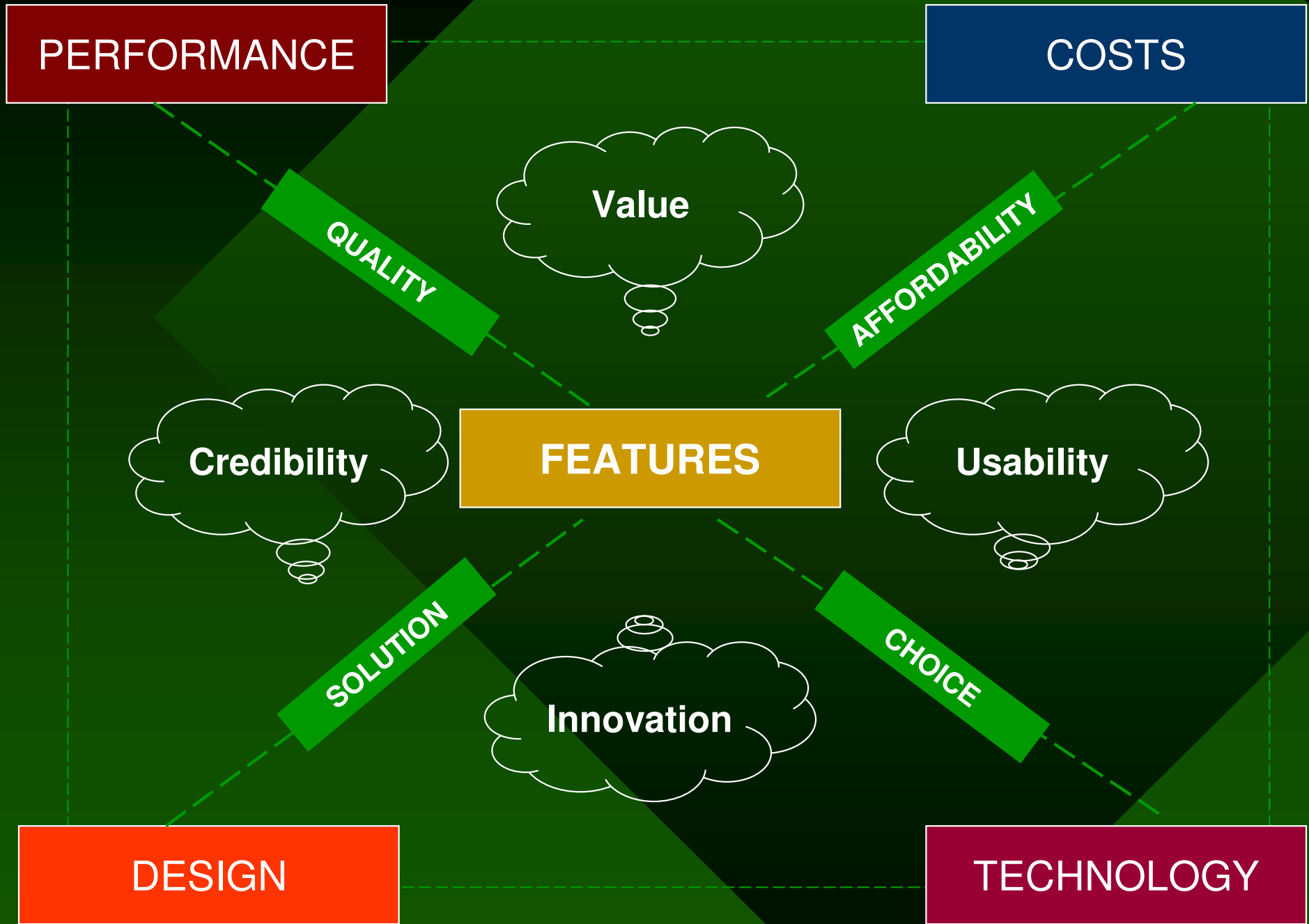
Benefit Engineering

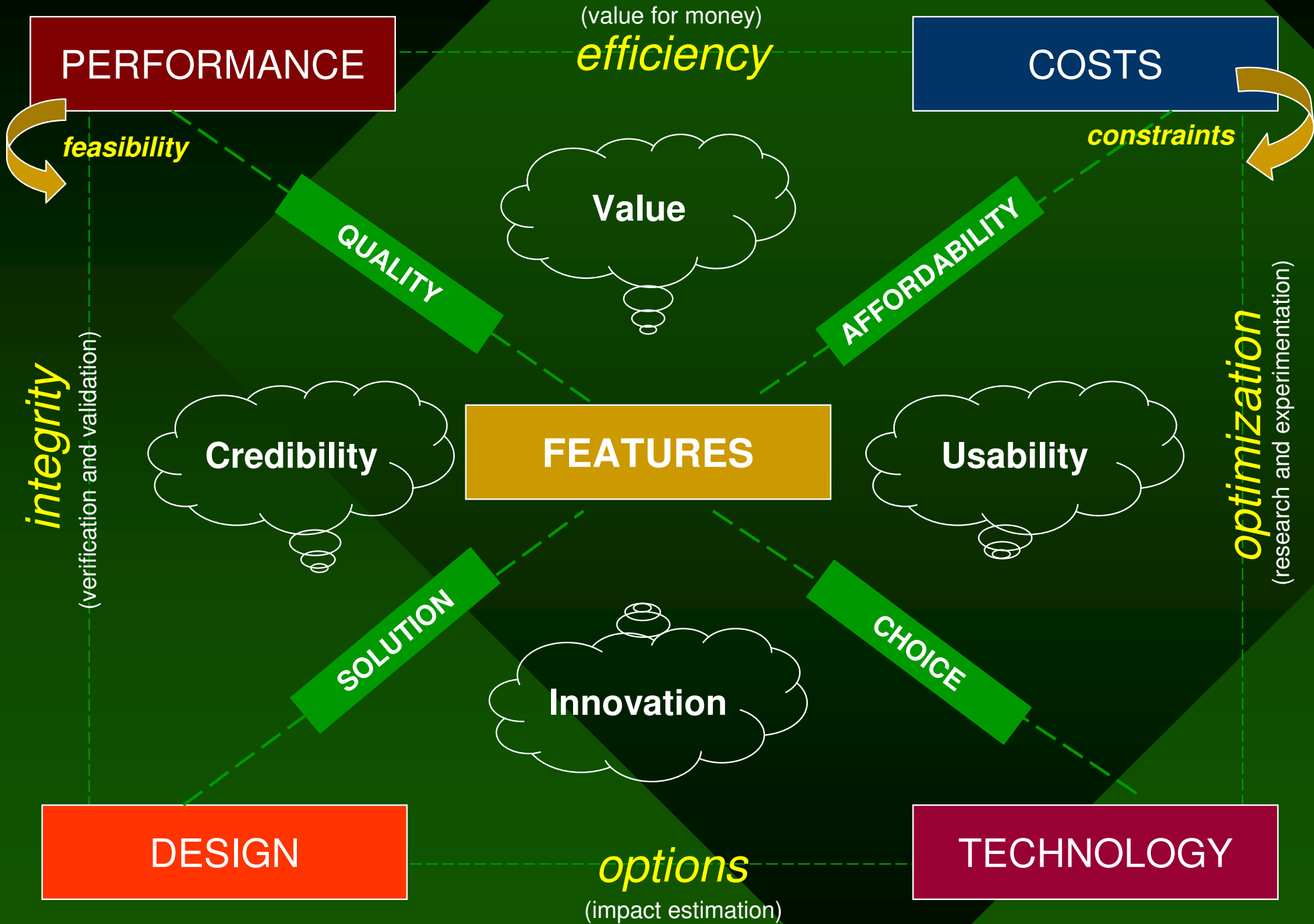


Value Influencers

- **Features** : Functionalities needed in the System to solve the problem or address the expectations of the Stakeholders
- **Design**: The solution architecture, approach strategy and engineering options, chosen to build the Software System that is intended to solve the problem in hand
- **Technology**: Choice of technologies implemented in Design, to realize the proposed benefits sought, within the mandated constraints, efficiently.
- **Cost**: Stakeholders' affordability in the given context and constraints imposed on availability of Resources (man, money, time, materials)
- **Performance**: Ability of the System Features to solve the problem efficiently in real time usage by stakeholders / users and meet their legitimate expectations. (ability to satisfy the stakeholders and users)

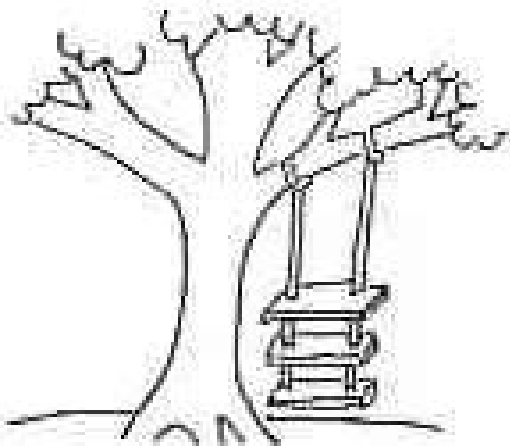




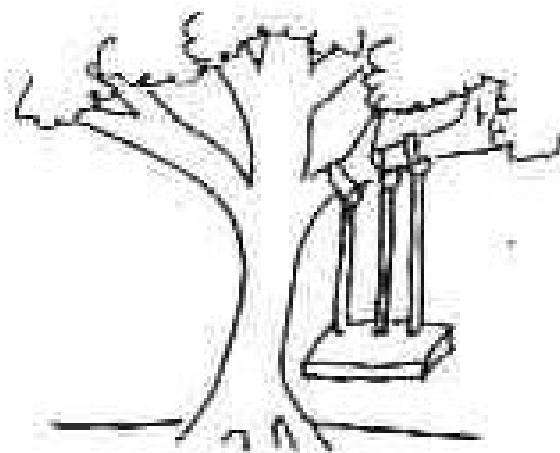


Why do Systems Fail ?

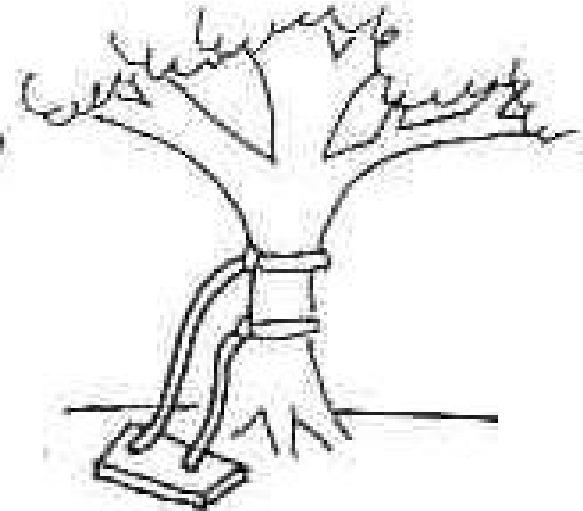
- Understanding why Software Systems fail to meet Stakeholder Expectations
- Understanding the 5-Gaps Theory



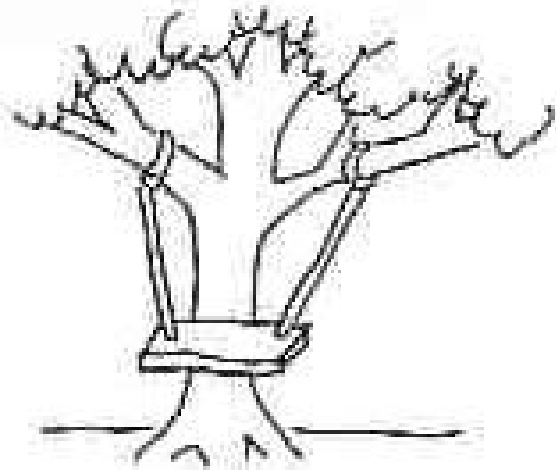
WHAT THE RFP
DESCRIBED



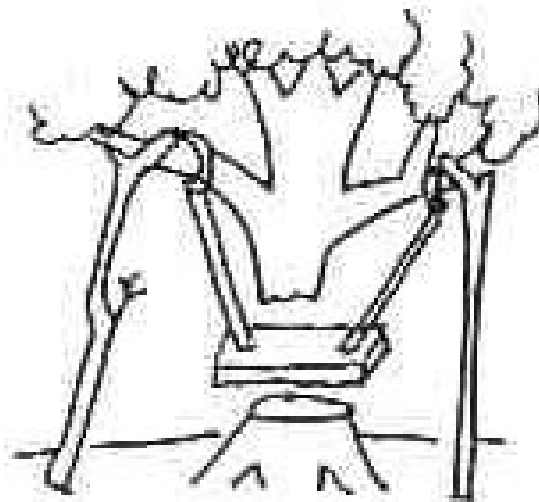
HOW THE BIDDER
UNDERSTOOD IT



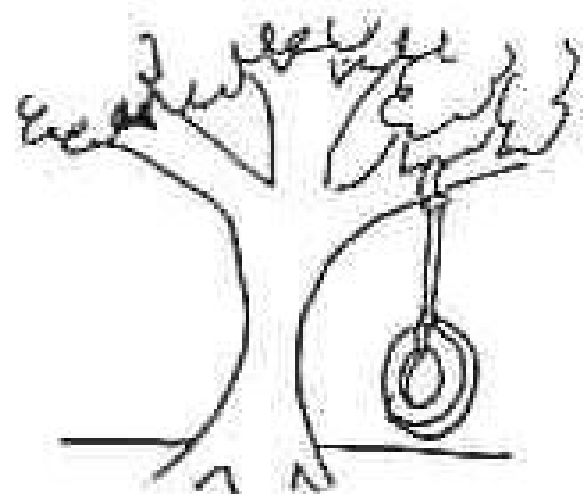
WHAT WAS SPECIFIED



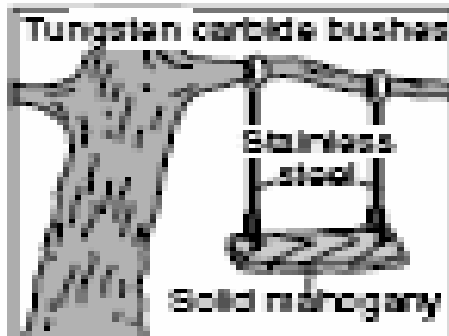
WHAT WAS DESIGNED



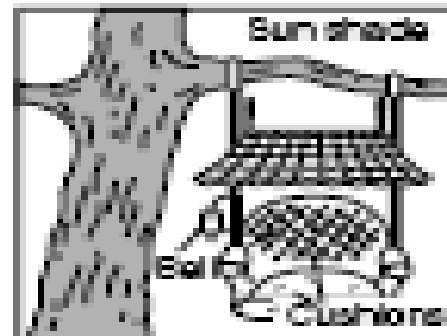
WHAT WAS IMPLEMENTED



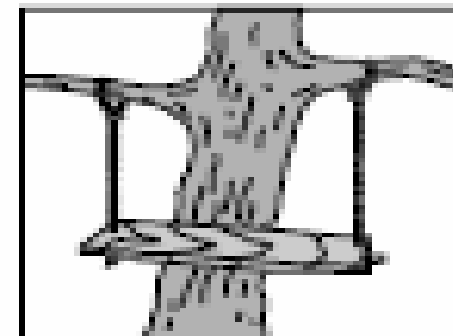
WHAT THE CUSTOMER
REALLY WANTED



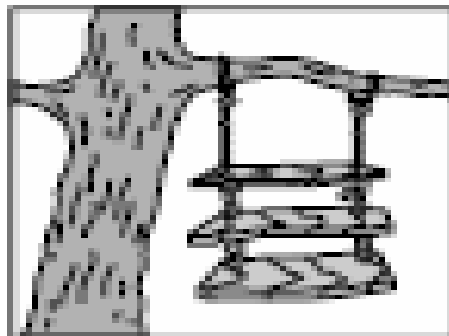
What product marketing specified



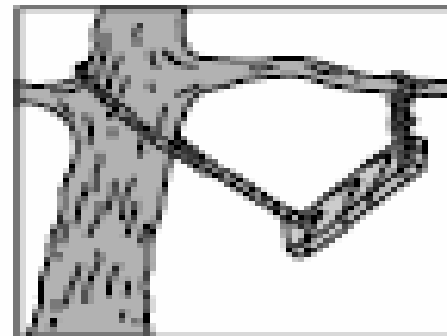
What the salesman promised



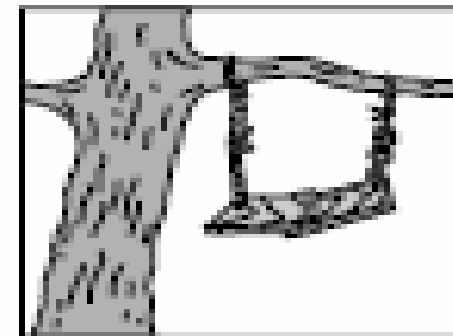
Design Group's Initial design



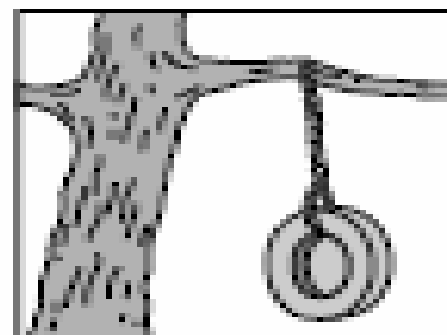
Corporate Product Architecture's Modified Design



Pre-release version



General release version



What the customer actually wanted

GAP - 1

What the Stakeholders “say” they want

VS.

What the Stakeholders really “need”

GAP - 2

What the Stakeholders “really” need

VS.

**What is “recorded and communicated” in
the Requirements Specifications**

GAP - 3

**What is “recorded and communicated” in
the Requirements Specification**

VS.

The “Benefit Intent” of System Design

GAP - 4

The “Benefit Intent” of System Design

VS.

The “ability” of the System Features (so implemented) to deliver the “intended” benefits to the Stakeholders in real time use

GAP - 5

**Stakeholders' Expectations on the
Software System**

VS.

**The “extent” to which the Software
System finally meets and exceeds
Stakeholders' Expectations**

The 5G-Model

- “5G” Analysis first attempts to analyze **what causes** each of these gaps in the way we build software systems.
- Through “5G” analysis, we consistently identify ways to align our options, plans, strategies and actions, **at closing these gaps**, systematically
- By focusing on “5G”, we learn to design and build software systems, **the right way**, that meets stakeholders’ expectations, **right the first time**.
- We learn to build the principles of **Stakeholder Value Engineering** into our Product Development Process by design.

Systematically aligning, planning,
engineering and managing all the...

“Value Influencers” and the “5 Gaps”

to generate the desired outcome **efficiently**,

delighting the Stakeholders all the way,

is called **Stakeholder Value Engineering**

Motivators

- **Features – Advantages – Benefits** Theory
- **SERVQUAL** theory for anticipating, understanding, meeting and exceeding Customer Expectations.
- **Competitive Engineering** and Evolutionary Project Management (Evo), “No cure, No pay”
- **Agile Methodologies** - Extreme Programming in particular
- **Theory of Constraints** and Critical Chain Management
- **Value Engineering** and Industrial Engineering Principles
- **GAPS Model** in Service Quality Management