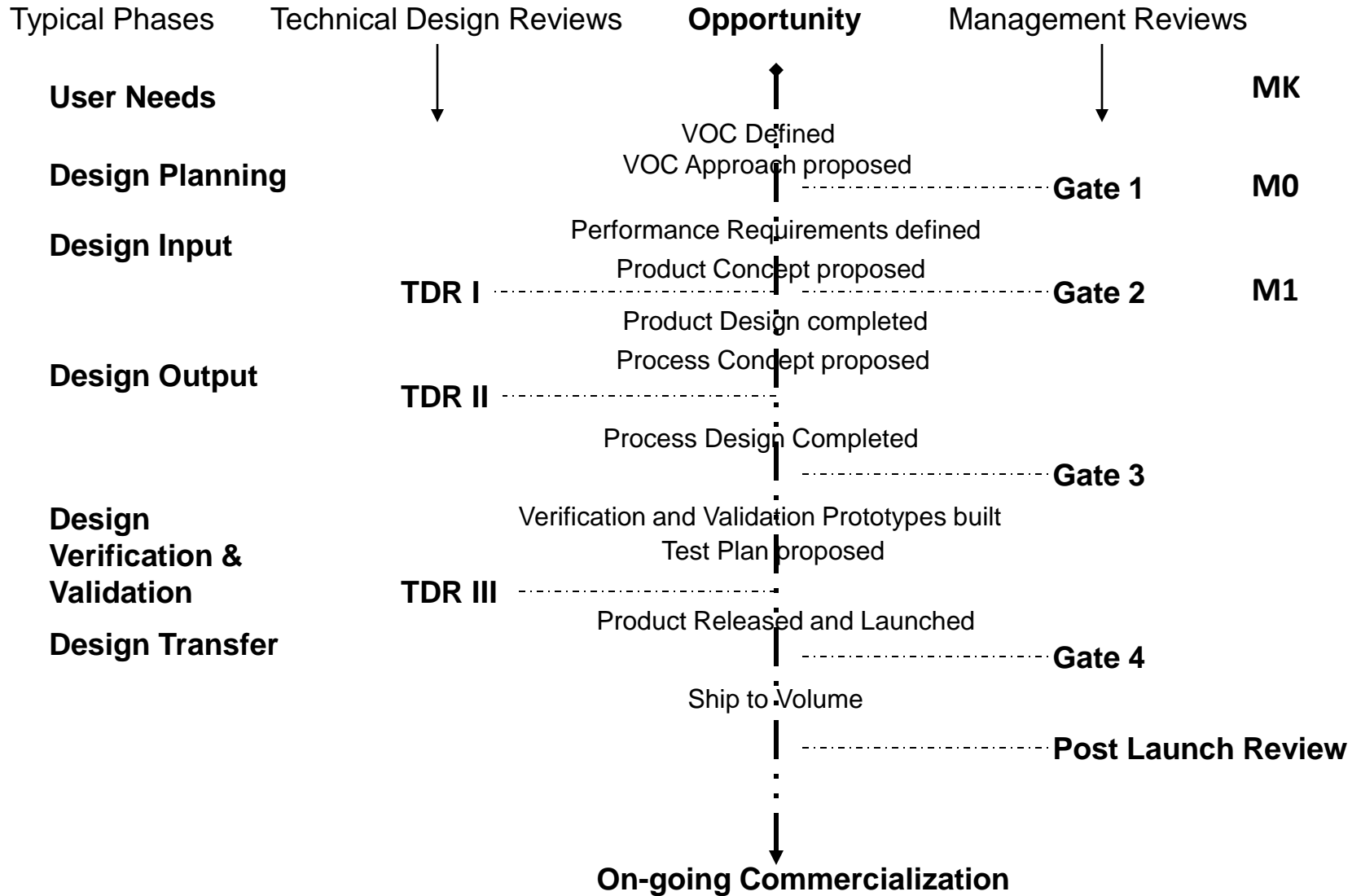


# Product Planning And Development Process

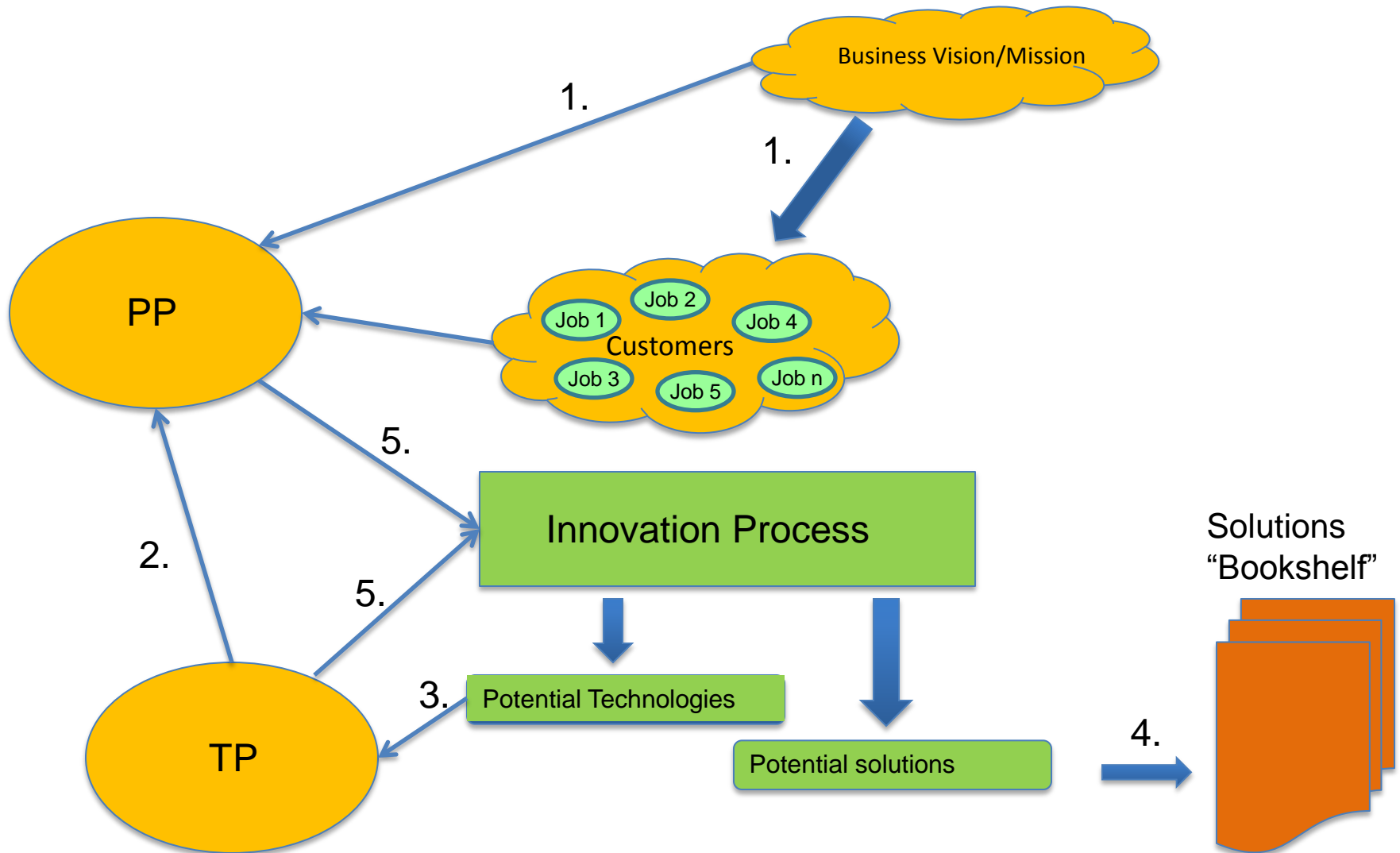
Hans Hjort  
Hans Hjort Consulting

[hhjort@cinci.rr.com](mailto:hhjort@cinci.rr.com)

# Typical Product Development Review structure



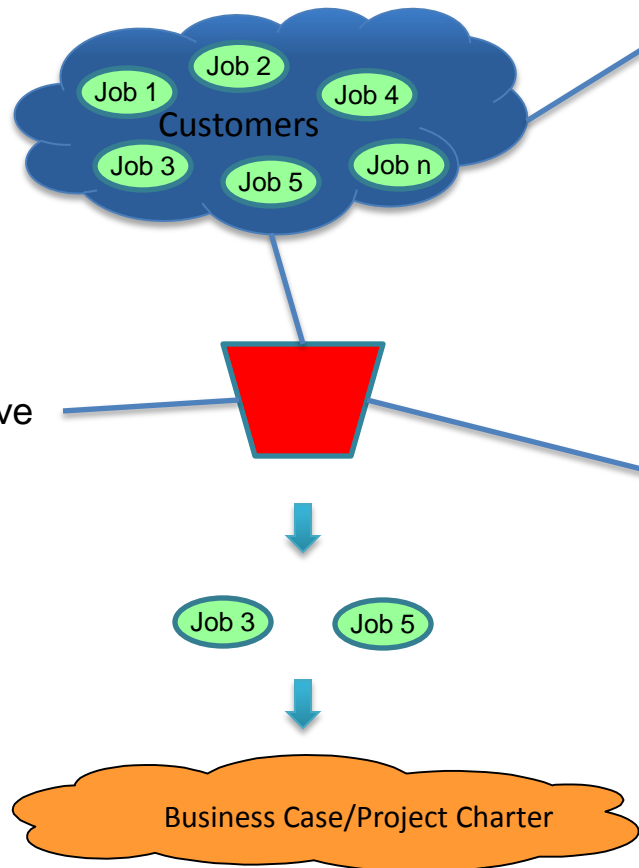
# Product and Technology Planning



# Early Marketing and Clinical **Define Seminal Idea**

Marketing takes the lead on identifying “jobs” and collecting data (imp. & sat.) from customers

Jobs can be:  
Clinical  
Operational  
Social  
Economic  
Etc.

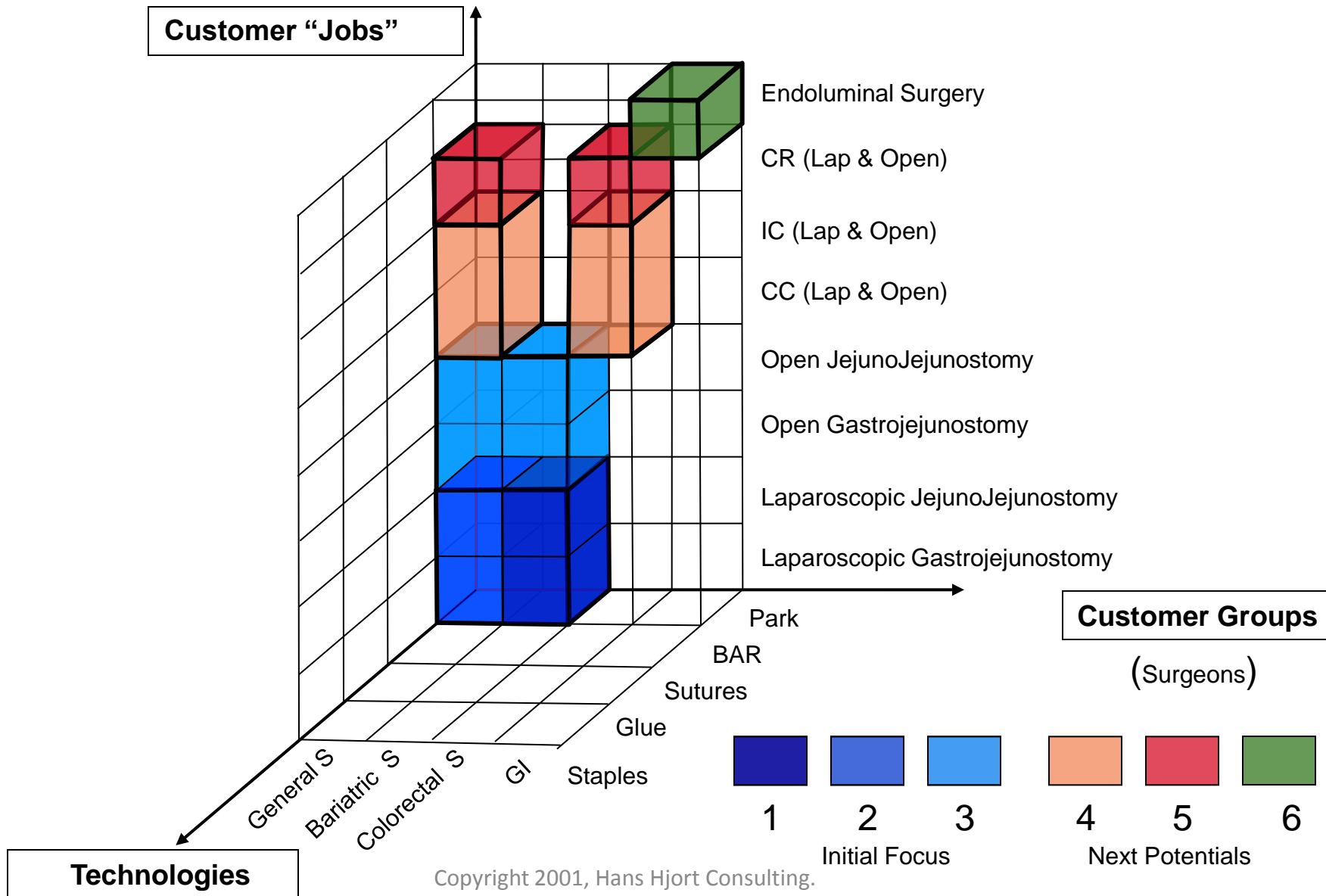


Business/Marketing are involved in selecting attractive “jobs” for planned effort.

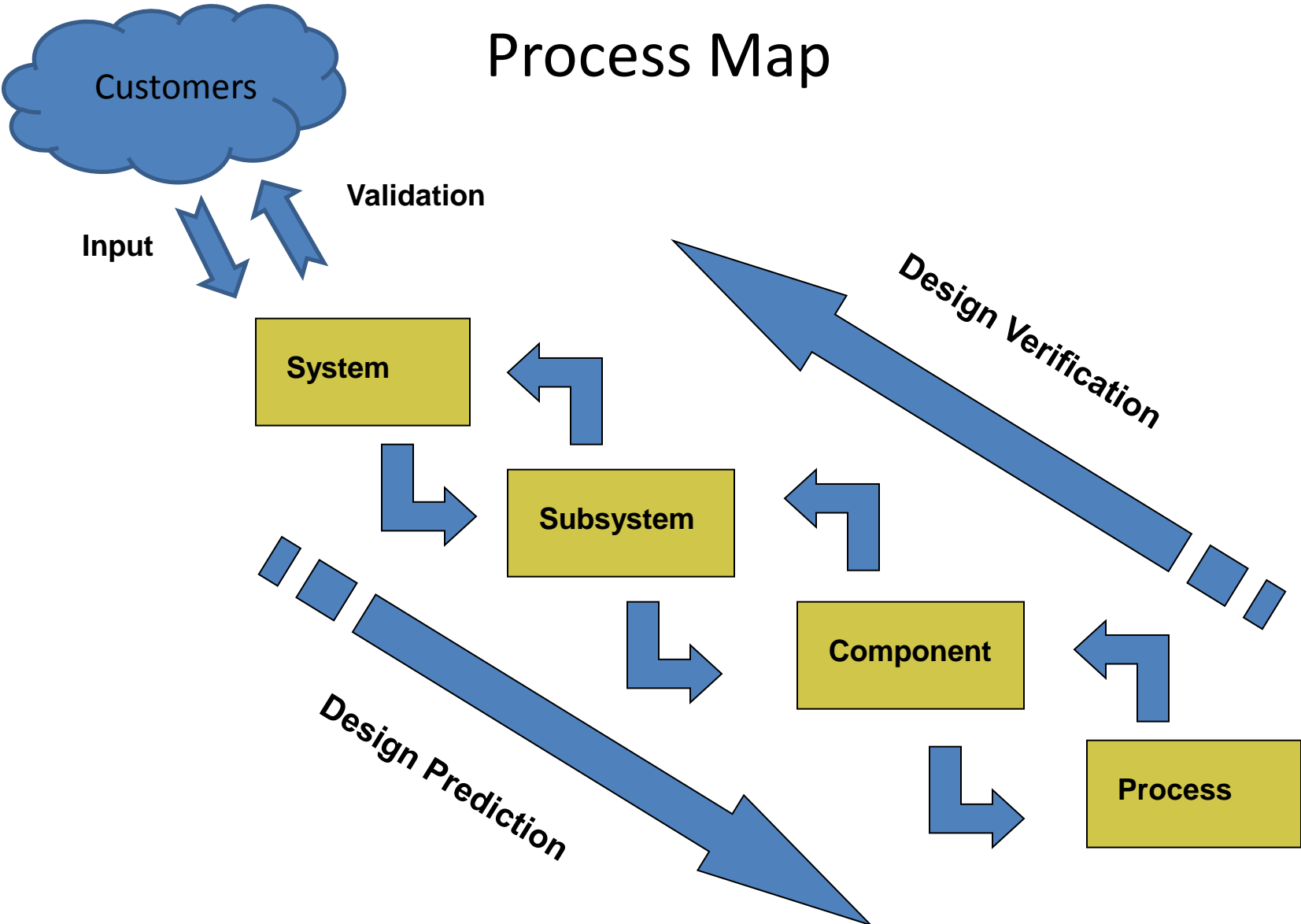
Attractive “jobs” could be new outcomes, “jobs” that we do not currently address, “jobs” that are important but nobody has been able to satisfy well, or “jobs” where we have a distinct competitive disadvantage

# Opportunity Space

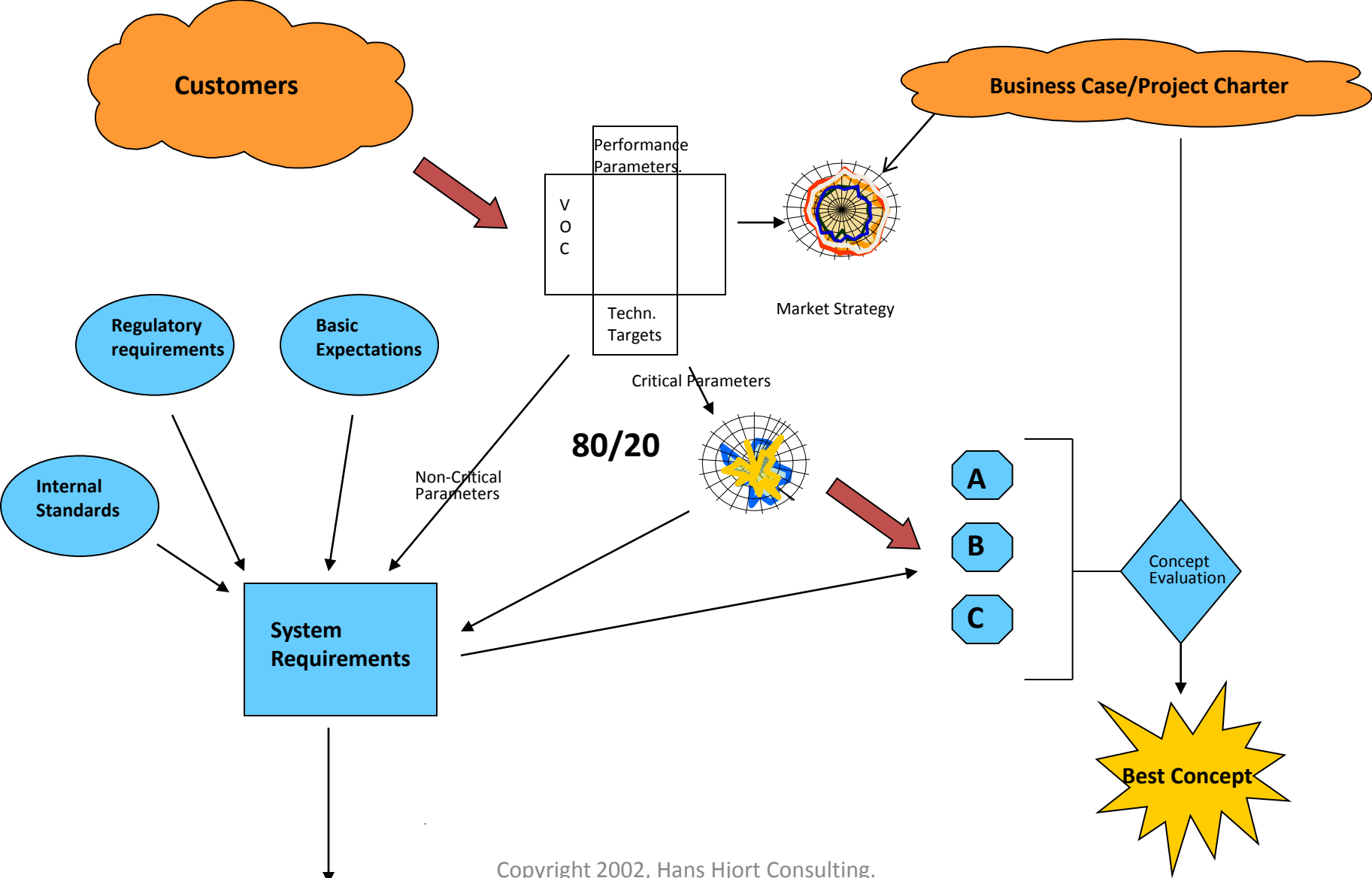
(US, Europe, and Japan)



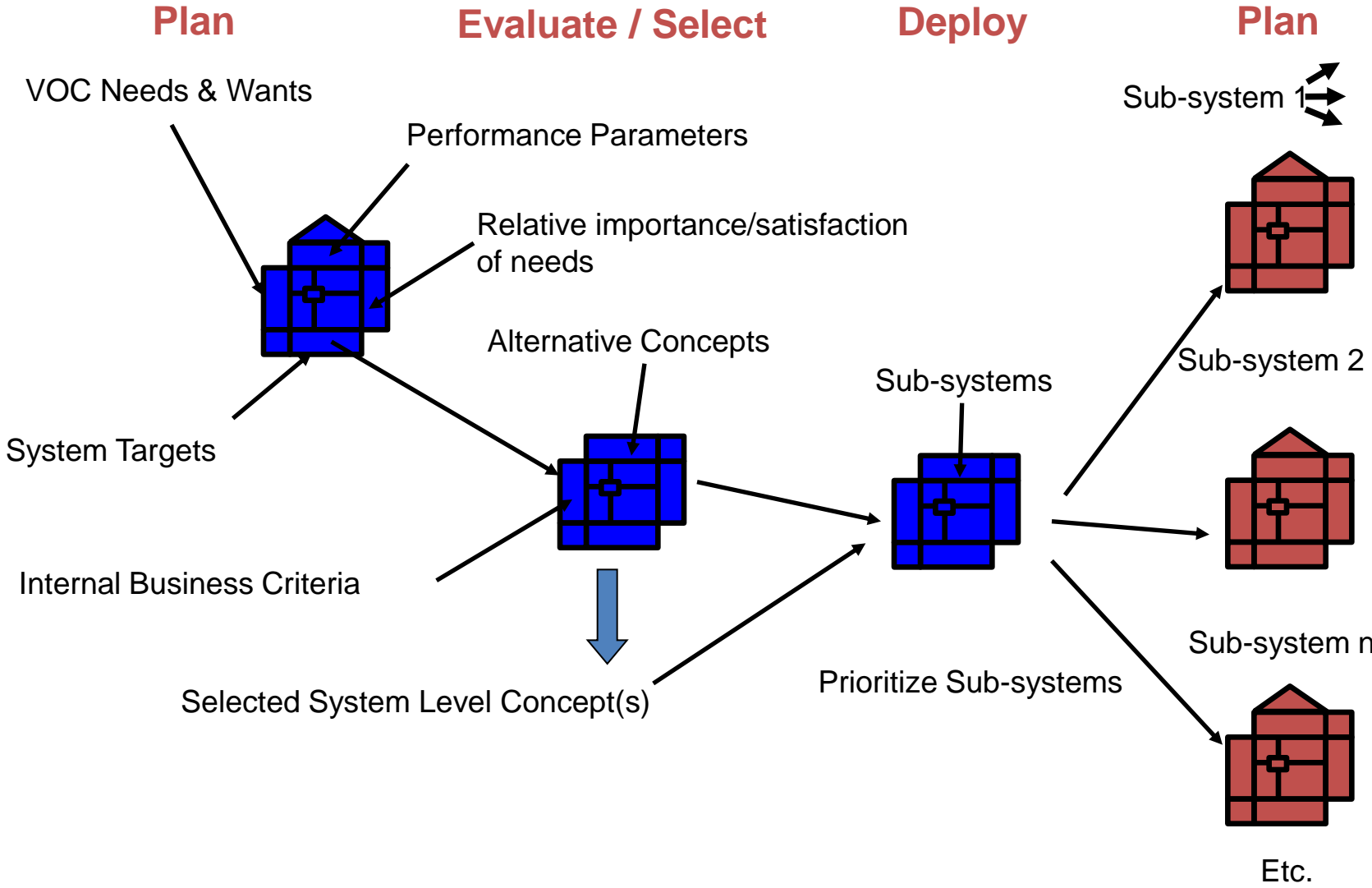
# Process Map



# To Satisfy The Customer...



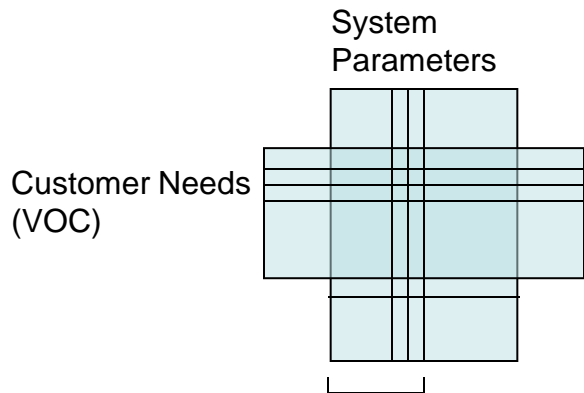
# Product Planning



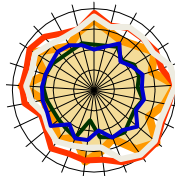


# System level Planning matrix

## System Planning Matrix (VOC Based)



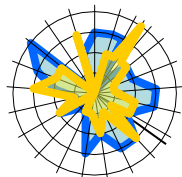
## Market Strategy



## Scorecard

System Parameters/CTQ	Weight		Project Milestones				Score				Weighted Score	
	W1	W2	Start	Plan	Do	Check	Act	Score	Weight	Score		Weight
Customer Satisfaction	0.2	0.1	4	3	2	1	0	2	0.2	0.1	0.1	0.1
Product Quality	0.3	0.2	5	4	3	2	1	0	0.3	0.2	0.2	0.2
Cost Efficiency	0.1	0.1	3	2	1	0	0	1	0.1	0.1	0.1	0.1
Time to Market	0.2	0.2	2	1	0	0	0	0	0.2	0.2	0.0	0.0
Customer Retention	0.2	0.2	4	3	2	1	0	1	0.2	0.2	0.1	0.1
Operational Efficiency	0.1	0.1	3	2	1	0	0	0	0.1	0.1	0.0	0.0
Compliance	0.1	0.1	4	3	2	1	0	1	0.1	0.1	0.1	0.1
Employee Satisfaction	0.1	0.1	3	2	1	0	0	0	0.1	0.1	0.0	0.0
Environmental Impact	0.1	0.1	2	1	0	0	0	0	0.1	0.1	0.0	0.0
Supplier Performance	0.1	0.1	3	2	1	0	0	0	0.1	0.1	0.0	0.0
Overall Score												

Vital few (CTQs) to support market strategy



## Technical Strategy (parameters' targets)

Most significant Parameters to satisfy the needs

Significant System Parameters and Targets (requirements)

# Voice of Customer (VOC)

## What is a VOC ?



Customers

**Start with long list of customer issues (mix of needs and features from different sources)**

Customer interviews and observations

**Then rephrase, eliminate, transfer issues to result in manageable list (10-25)**

**For example:**

I need the patient to receive the exact prescription that was ordered by the doctor.

**Not how it may be accomplished:**

I need the pump to be able to be programmed automatically from the pharmacy system

**Not to be included in the VOC list:**

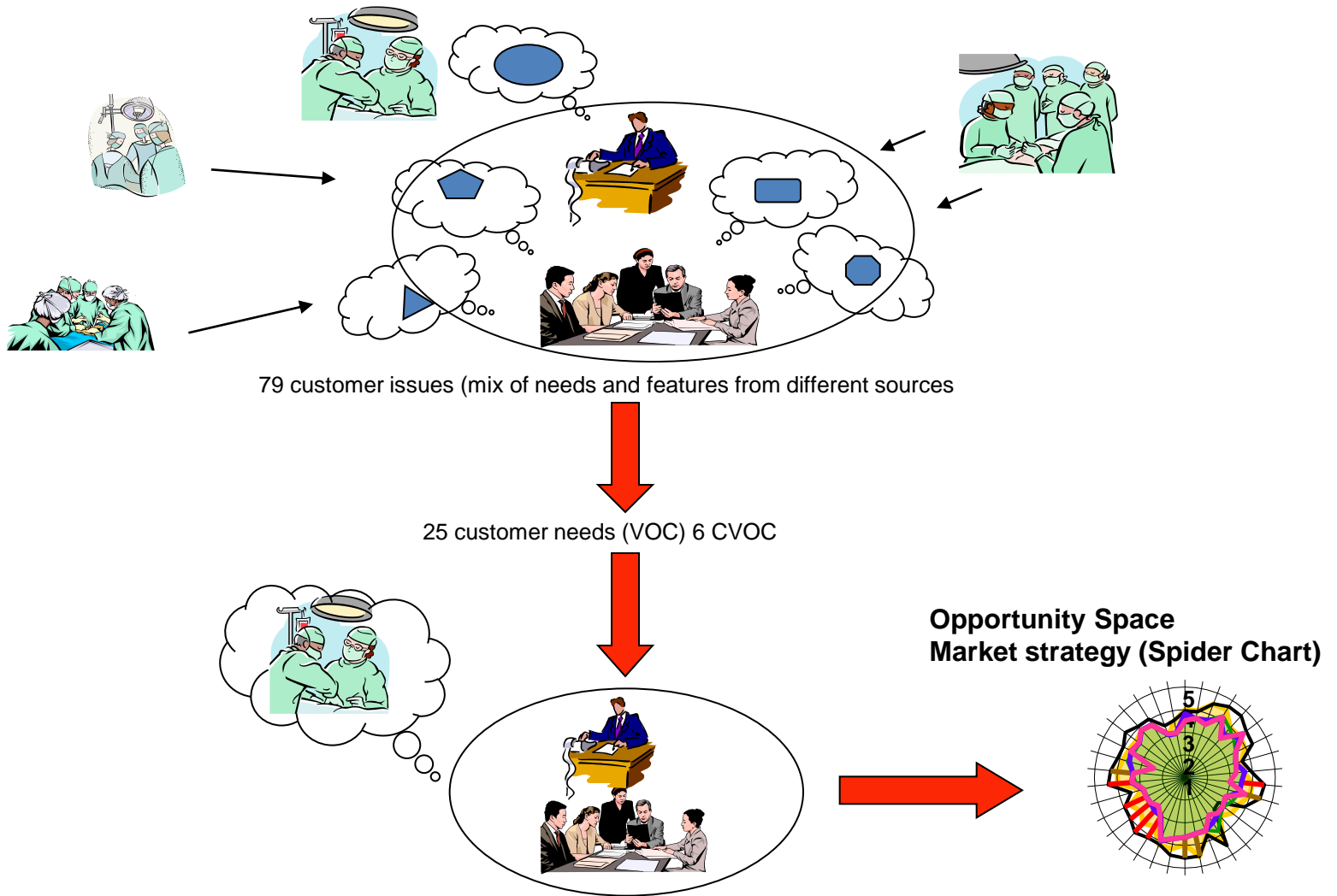
Givens (or basic expectations)

Regulations and standards

VOB (Voice of Business)

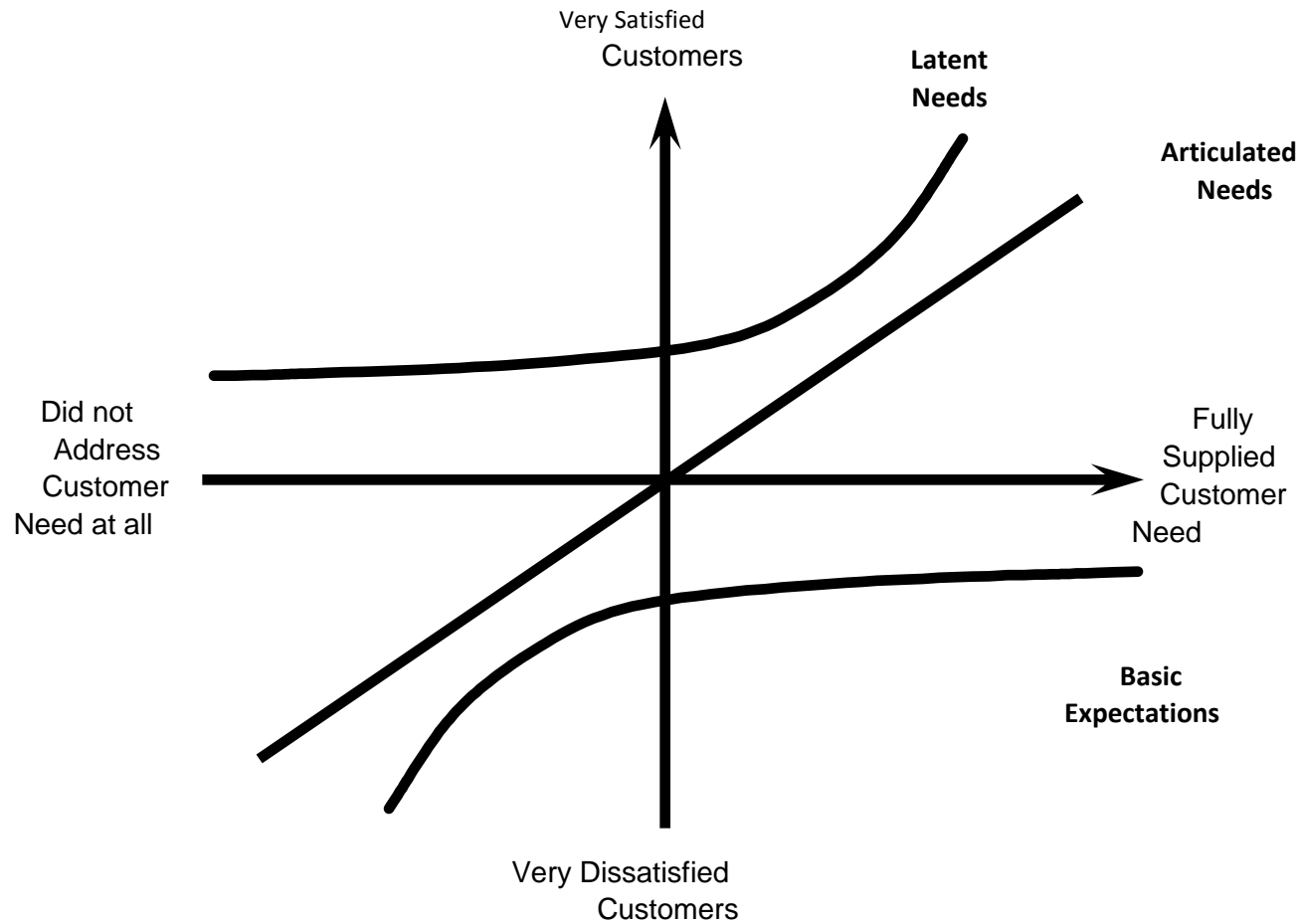
**The list of VOCs defines our opportunity for competitive advantage**

# Market Strategy



**Team members know what to accomplish for customers and why**

# Needs vs. Customer Satisfaction (Kano)



# Voice of Customer (VOC)

What do we need to know about the VOC ?

## Importance:

Is this issue (VOC) important enough to the customer to be recognized if satisfied better by us than our competitors?

## Satisfaction:

How well does the customer feel our current product satisfies each VOC?

How well does the customer feel ours and our competitors products satisfies each VOC?

By collecting these perceptions from the customers we are able to understand the landscape that we are trying to influence to achieve the results identified in the project charter

# **Product Requirement**

**What converts a VOC to a product requirement?**

## **Desired/Future Satisfaction:**

**Knowing the current situation surrounding the VOCs, the development team assigns the satisfaction profile that must be achieved to gain the desired competitive position**

**The desired satisfaction profile is based on the team's assessment about current state of technologies as well as the product/company image that must be reinforced.**

**The team also considers potential competitor moves prior to launch**

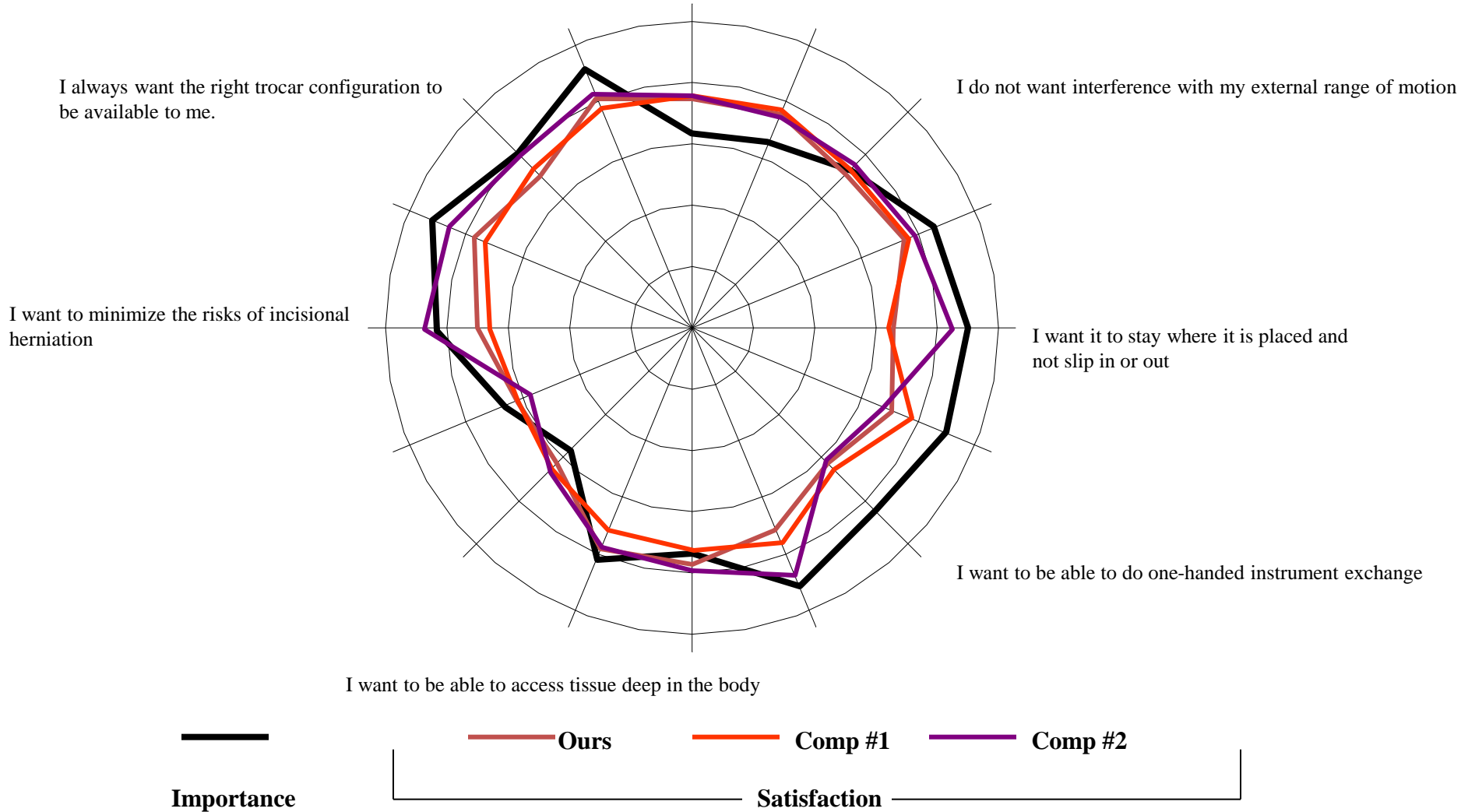
## **Product Requirement:**

**A product requirement is the VOC supplemented by the satisfaction goal assigned by the team and approved by management**

**This can be communicated by means of a "Spider" chart (or Radar chart)**

# Competitive Market Position (Trocars)

I do not want the internal cannula to be in the way, i.e. it prevents sword fighting



# Planned Competitive Position (Comp #1)

I do not want the internal cannula to be in the way, i.e. it prevents sword fighting

I always want the right trocar configuration to be available to me.

I do not want interference with my external range of motion

I want to minimize the risks of incisional herniation

Gold Space – Competitive Advantage

I want it to stay where it is placed and not slip in or out

Red Space – Current Competitor/us

I want to be able to do one-handed instrument exchange

White Space – Future opportunity

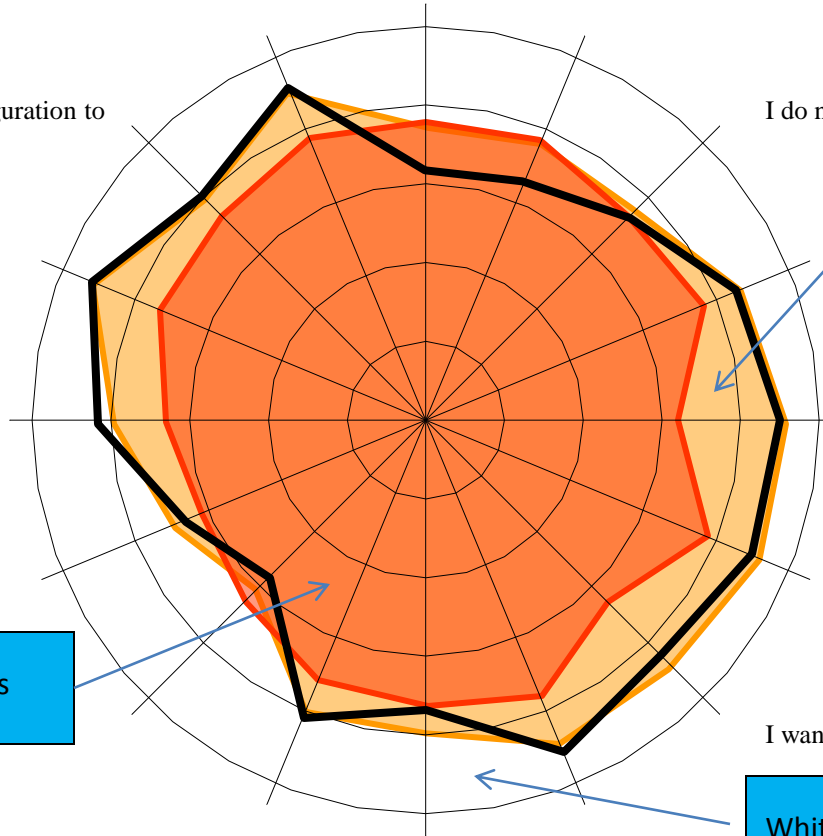
I want to be able to access tissue deep in the body

**Importance**

**Comp #1**

**Our New**

**Satisfaction**





# Market Strategy

(Survey)

I want to bring my next patient into the procedure room as soon as possible

Once I start a procedure, I don't want to be distracted

Gold Space – Competitive Advantage

I want a system that can be set-up fast

I always want to be able to override a system's actions

I want the system that can be moved easily between procedure areas

Green Space – Current Situation

I want to avoid adverse events

I want detailed timely record keeping of procedure events whenever requested

White Space – Future opportunity



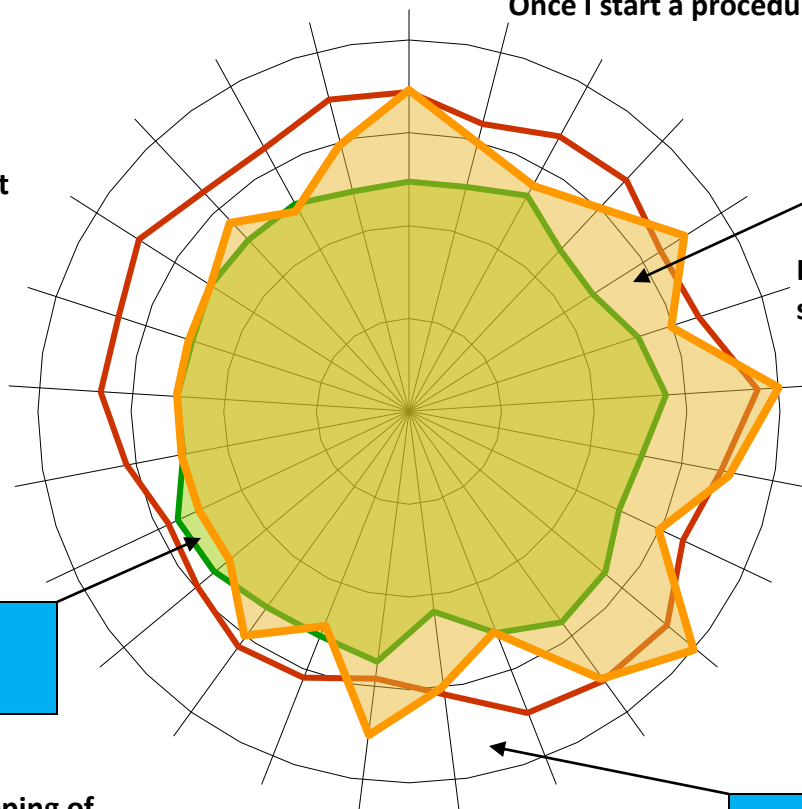
Importance



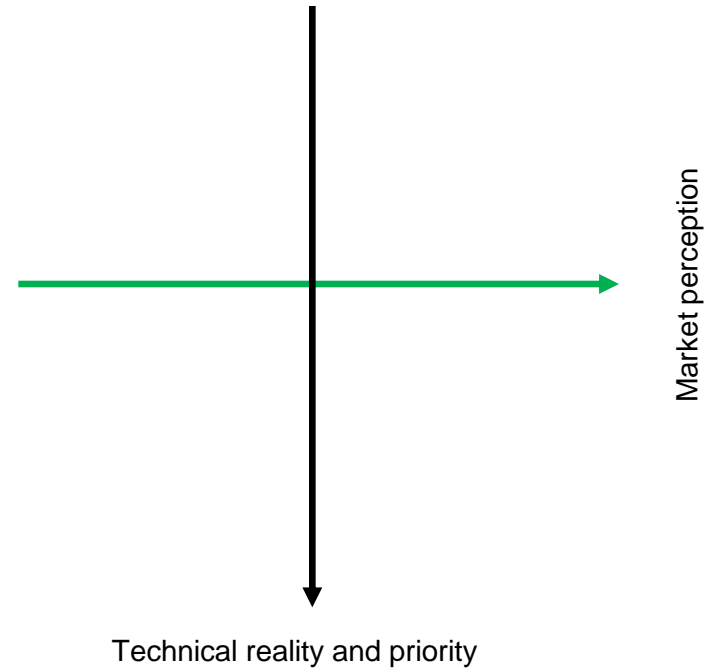
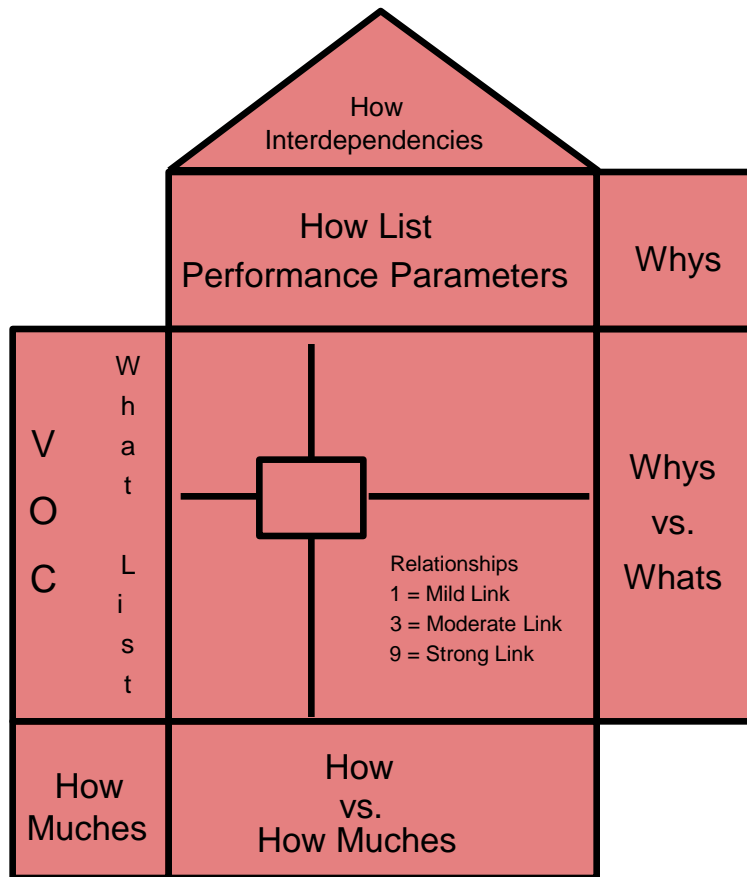
Satisfaction Current



Planned Satisfaction



# Planning Matrix (House of Quality)



# Performance Parameters

## What is a performance parameter?

### Performance parameter:

**A definition of a tangible/measurable deliverable by the future product**

**At this point, the future product concept may not yet have been defined**

**The performance parameters becomes the mean by which we can influence satisfaction of the VOCs**

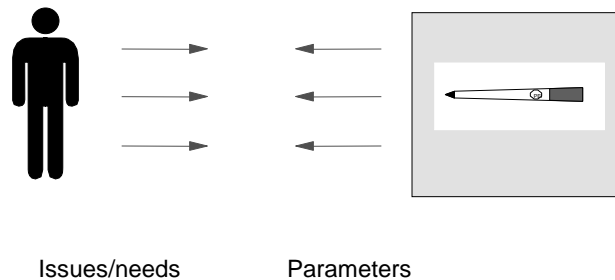
**By delivering more or less of a parameter we will satisfy one or more VOCs more or less**

Performance parameters such as **“Number of interactions/transactions between doctor and medication delivery”** and **“level of authentication for access to prescription”** would have an impact on the VOC **“I need the patient to receive the exact prescription ordered by the doctor”**

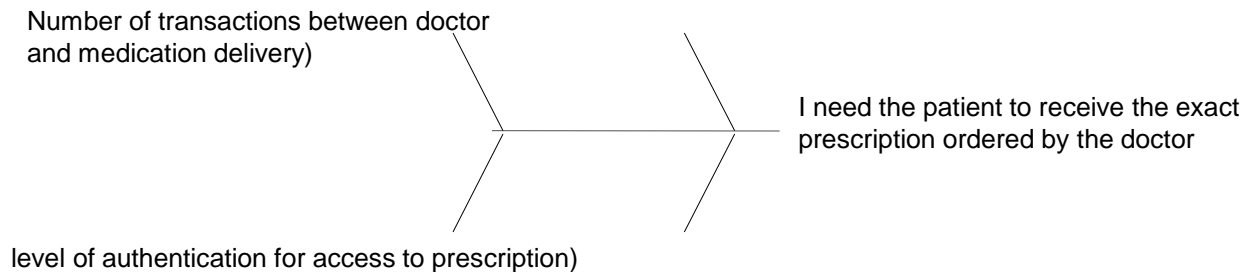
**Once we assign a target to a performance parameter it becomes a system requirement**

# Planning Matrix-Performance Parameters

Consider “product” as a “black box” to focus on what a solution (product) should deliver (performance parameters) rather than what it is



It may be helpful to use a fishbone diagram to clearly identify which parameters are influencing which issues/needs.



# Correlation between Performance Parameters and VOCs

## Why correlation:

To understand the role of a parameter in satisfying a given VOC

To understand the role of a parameter in addressing all VOCs

To understand if all VOCs has been adequately addressed

To deliver background for Prioritization of parameters

## Typically restricted to Blank, 1, 3, 9

9 - This Performance Parameter could on its own deliver 75%-100% on this issue/need

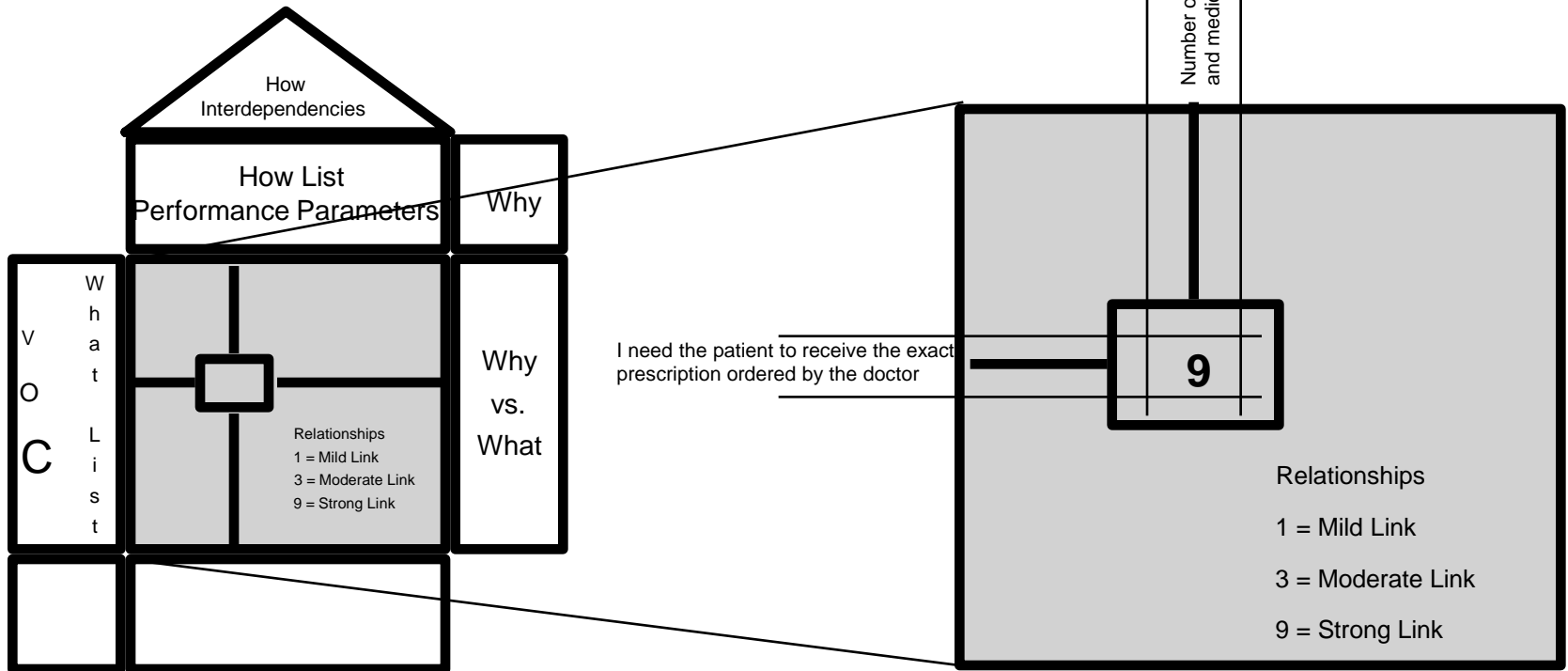
3 - This Performance Parameter could on its own deliver 25%-75% on this issue/need, other variables are also needed to deliver on the issue/need

1 - This Performance Parameter have some effect <25% on delivery of this issue/need

Blank - This Performance parameter has no effect on how this issue/need is satisfied

# Correlation between Performance Parameters and VOCs

How is it captured and documented?



# Identify CTQs

## What is a CTQ?

**As the name “Critical to Quality” implies, we must identify the performance parameters that will be critical to us achieving the level of quality that is desired.**

**A commonly accepted definition of quality is its measure as customer satisfaction**

**Critical to quality must then mean the performance parameters critical to achieve our desired level of customer satisfaction**

## How is the CTQ selected?

**First, identify the VOCs that shows the largest increase/stretch in satisfaction (between how our customers currently are satisfied to how we plan to satisfy them) (CVOCs)**

**Then, select the parameters that strongly impact our ability to satisfy those CVOCs. These parameters will be our CTQs since they will be either New, Unique, or Difficult.**

**Additional CTQs could also be selected from compliance requirements if new regulations took effect. If not, we already are delivering on these.**

# Identify Significant Performance Parameters

## What is a “Significant Performance Parameter”?

In addition to the CTQs we also want to identify the performance parameters that will have a major/ significant impact on how we satisfy the overall list of VOCs. These are then major contributors to our success.

This is where we utilize the planning matrix to allow us to generate a quantitative measure for the impact any parameter can have on the overall list of VOCs..

	Number of transactions between doctor and medication-delivery	Modified Importance
I need the patient to receive the exact prescription ordered by the doctor	9	40
I need to be confident that only my facility's prescribed medication will be administered	3	30.6
Overall Impact	452	

$$MI = Imp \times \text{future sat} / \text{current sat.}$$



# Setting Targets for Performance Parameters

What drives the targets?

**For CTQs and other significant Parameters:**

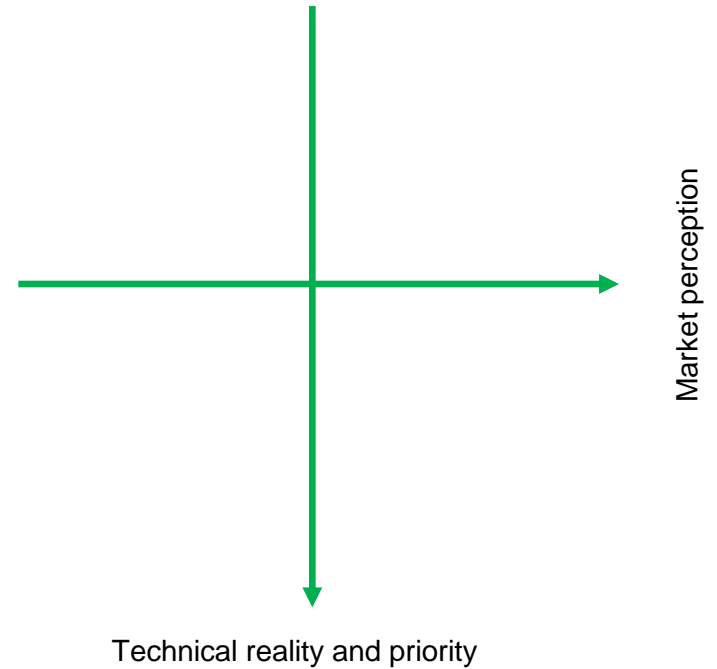
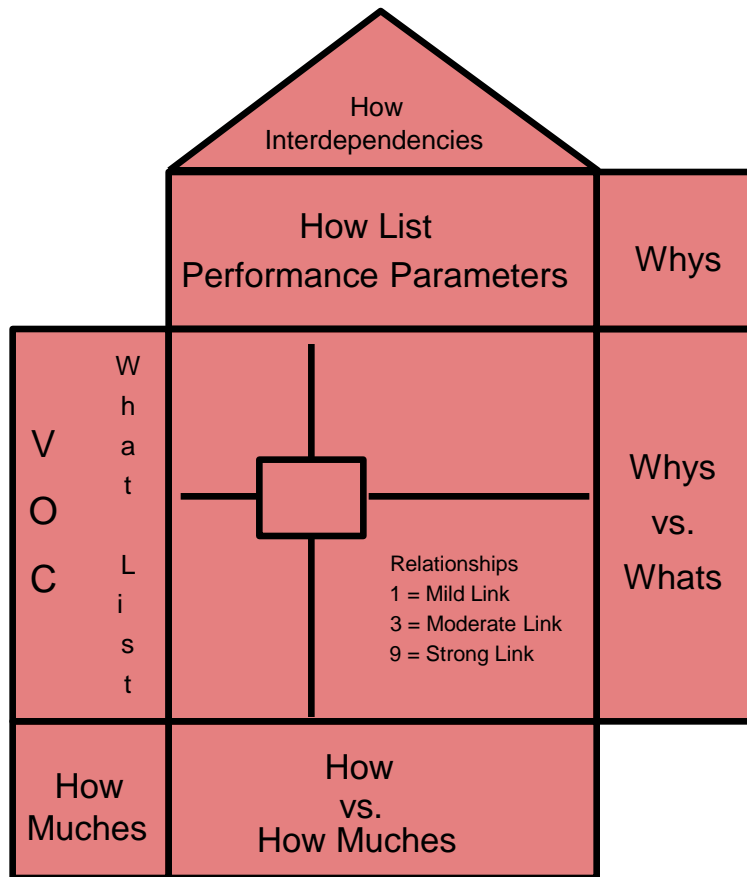
**The delivery of the parameter by our current product and by competitors' products resulting in the corresponding level of satisfaction**

**Our target must show similar aggressiveness in the parameter delivery as shown for the correlated satisfaction “stretch”**

**Based on development time constraints, several targets may be identified (current project, 5 year out, ideal)**

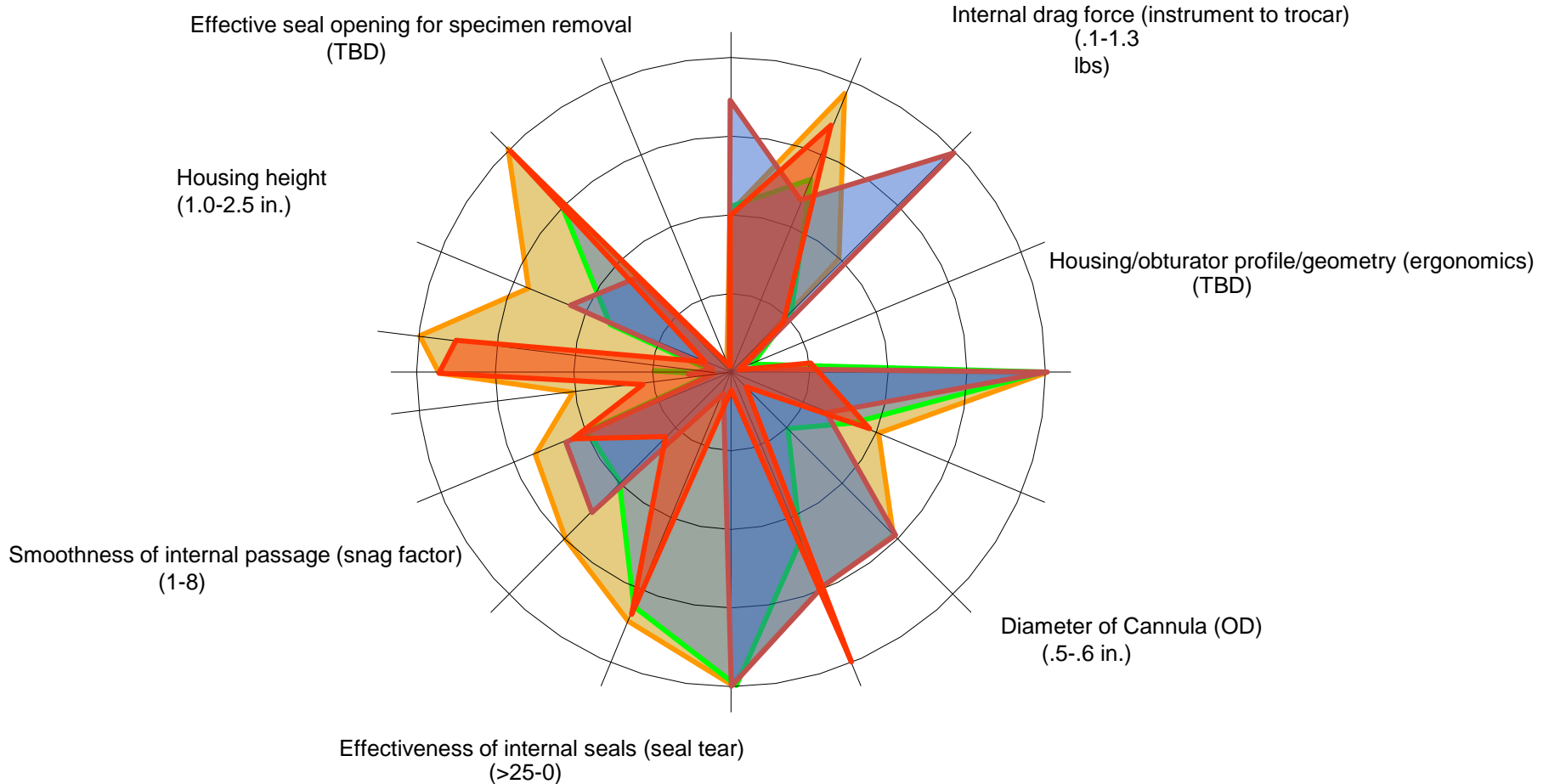
**Current project targets must be assessed to deliver on the desired satisfaction profile and future targets would identify potential future product requirements**

# Planning Matrix (House of Quality)



# Key Parameters - Trocar

## Planned Improvement



**Ours**

**Comp. #1**

**Comp #2**

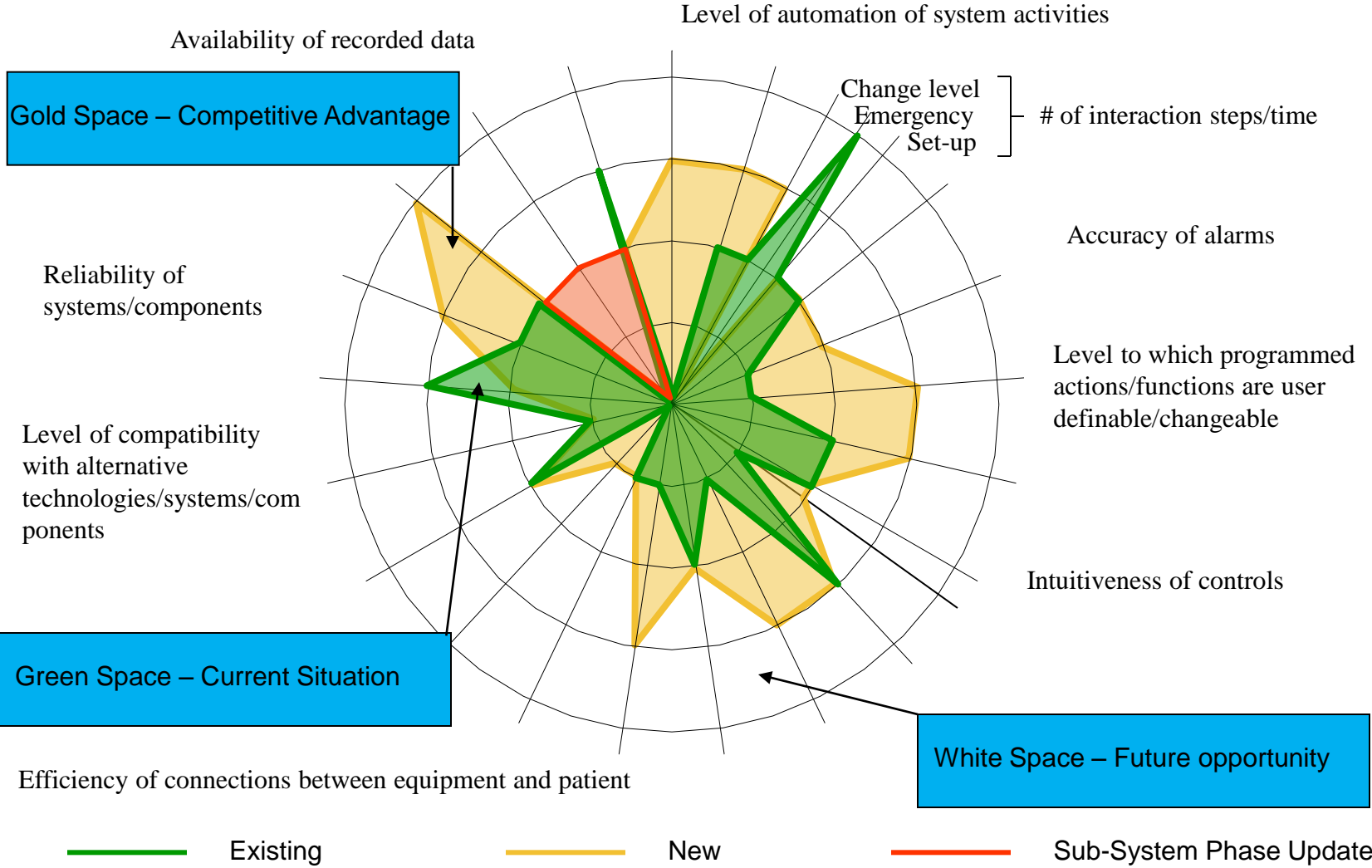
**Planned New**

Scale definitions in "Parameter scale" file (Excel).

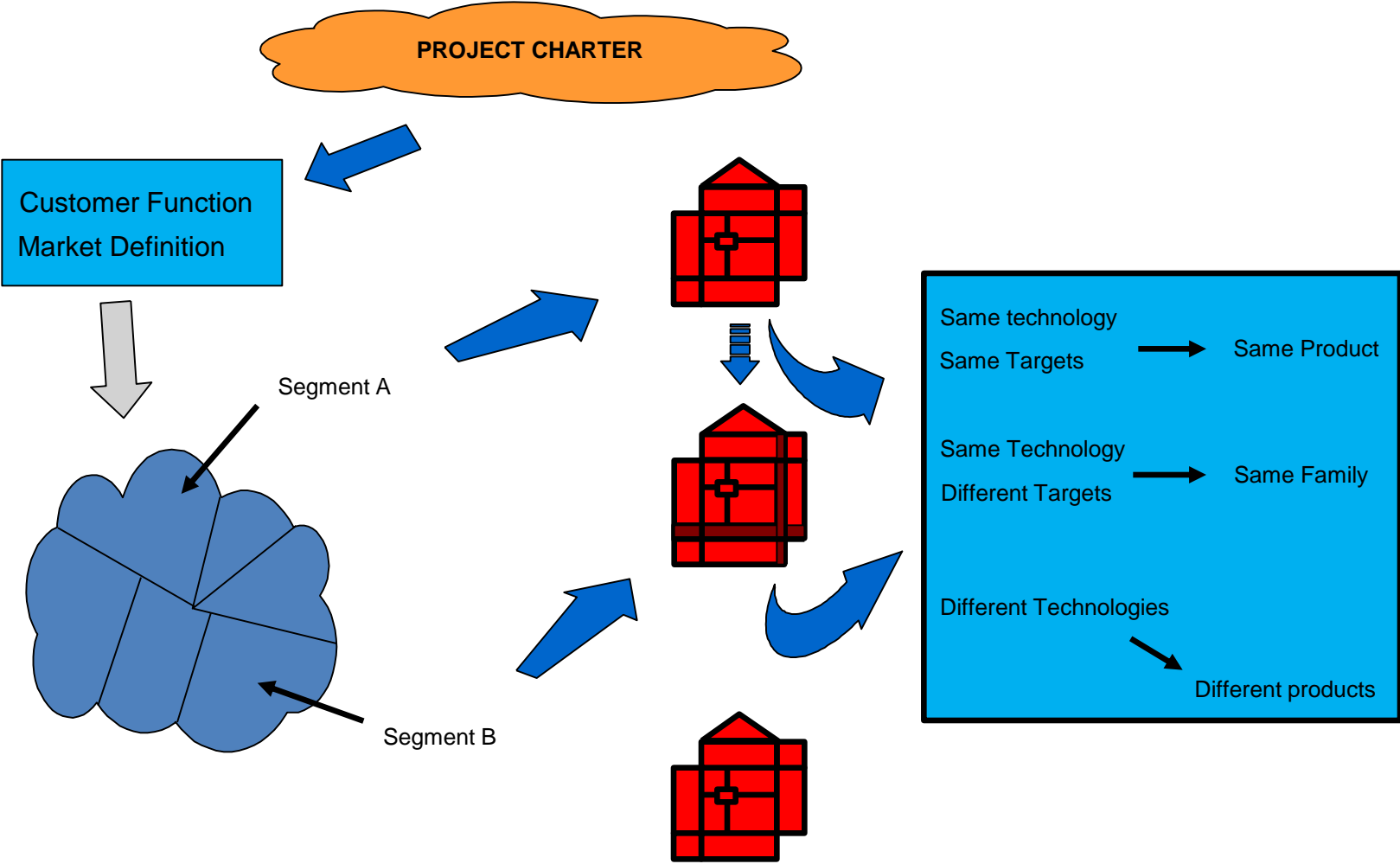
Perimeter = Optimal Delivery

# Technical Strategy

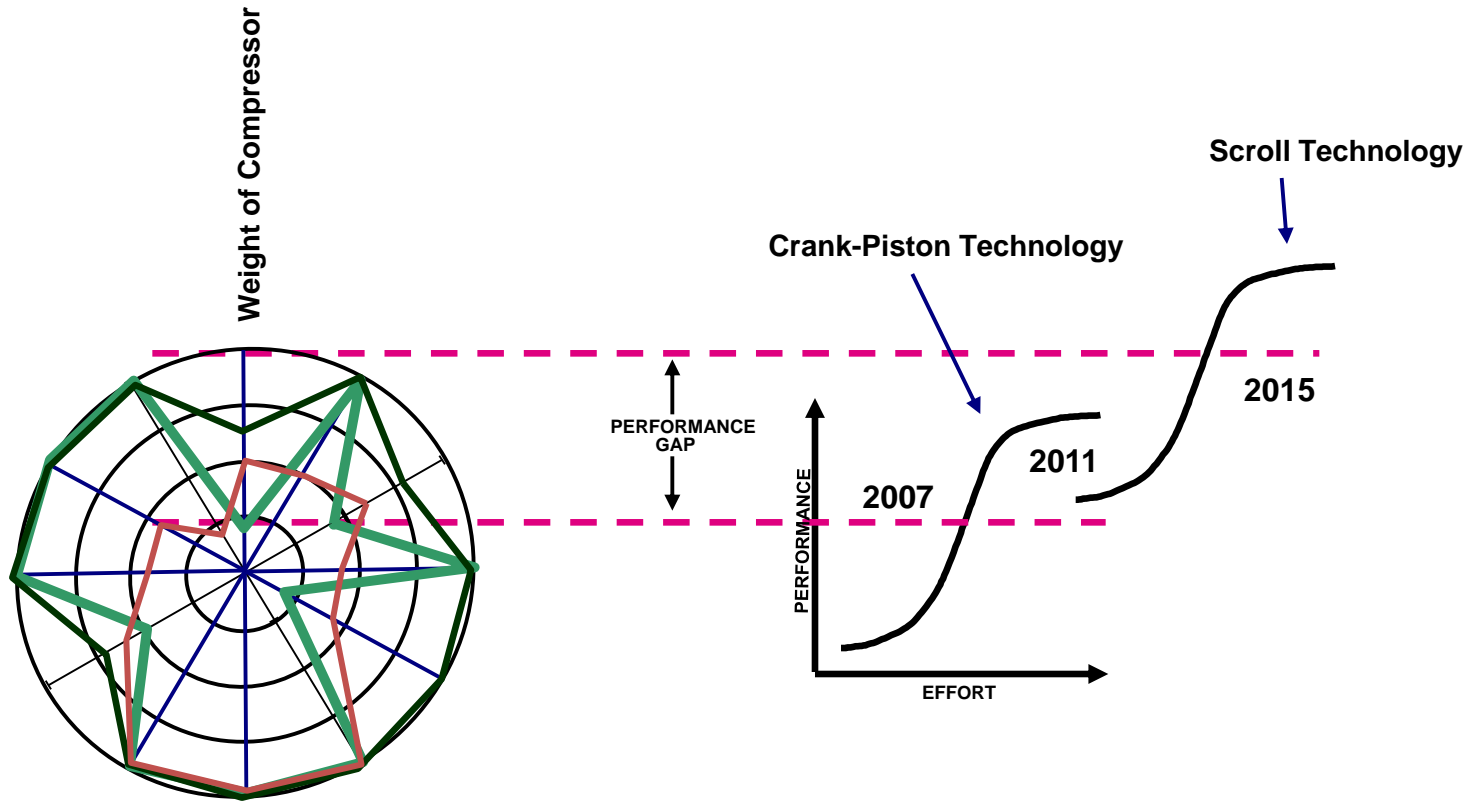
## Most Significant Parameters



# Product Families



# Technology Planning



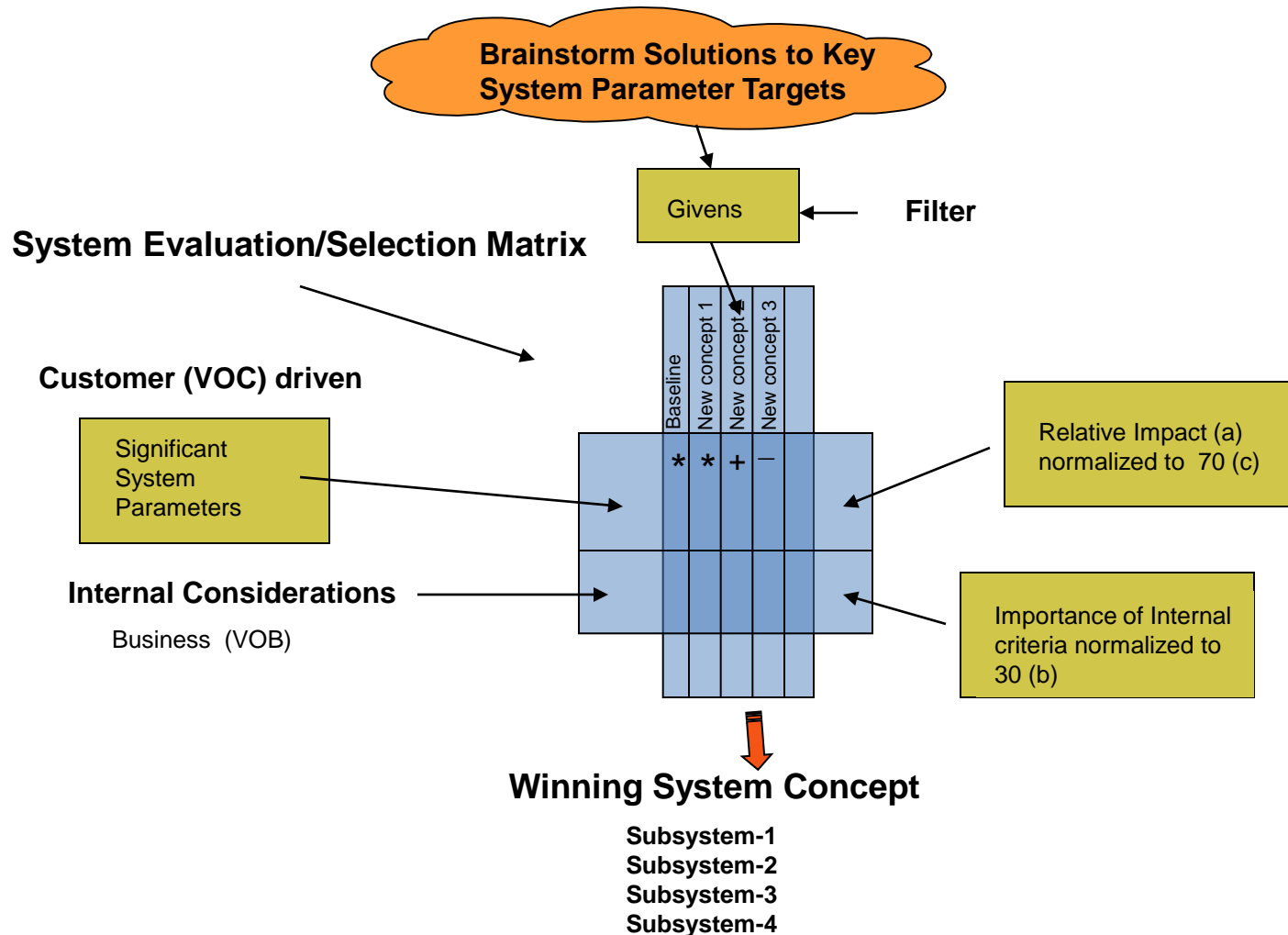
- Our Product —
- Comp. 1 —
- Comp. 2 —

CIRCUMFERENCE OF CIRCLE REFLECT TARGET VALUES

PERFORMANCE GAP IS A MEASURE FOR OPPORTUNITY AND VULNERABILITY

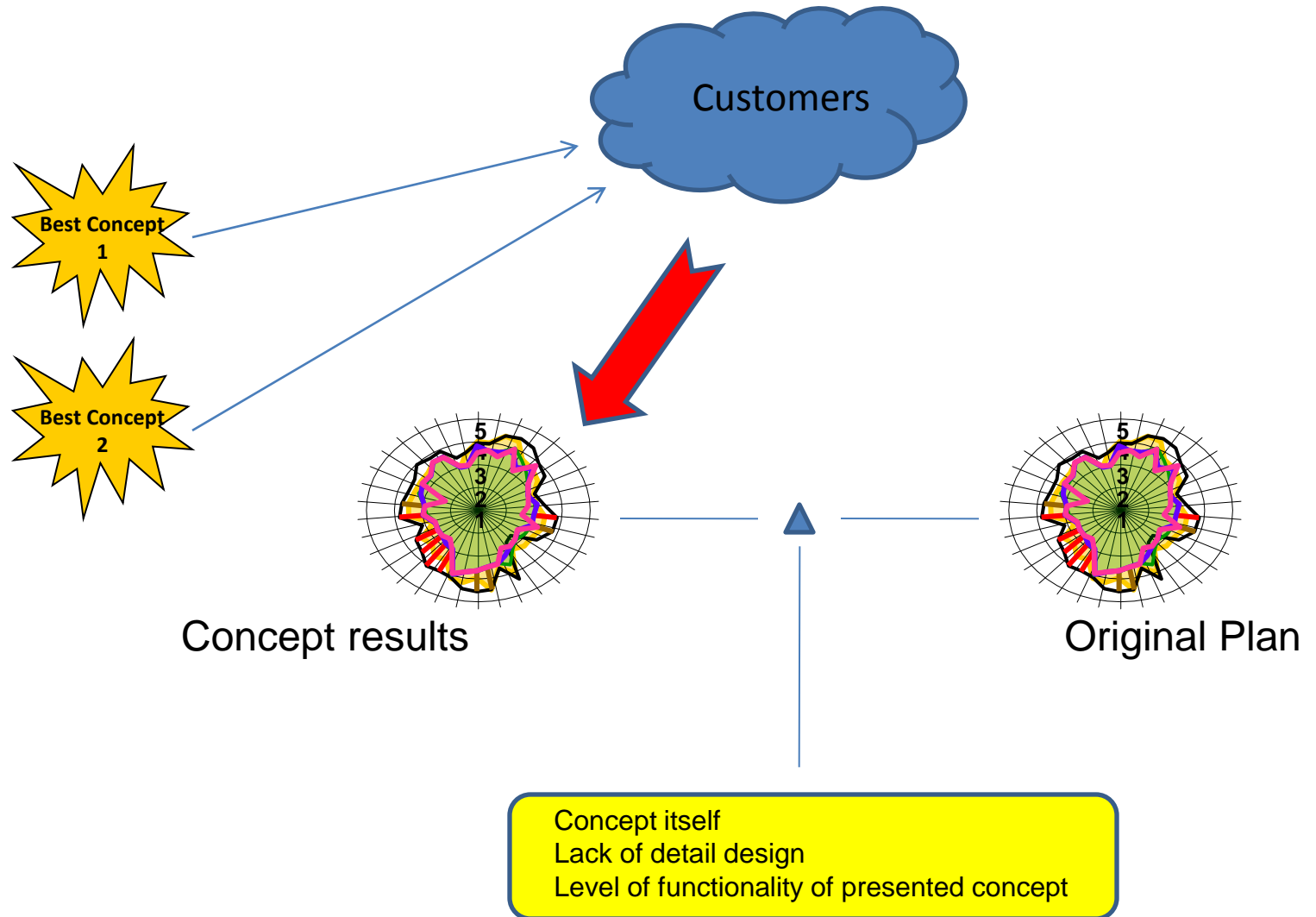
# VOC Cascading Process

Define Alternative Concepts and Select best



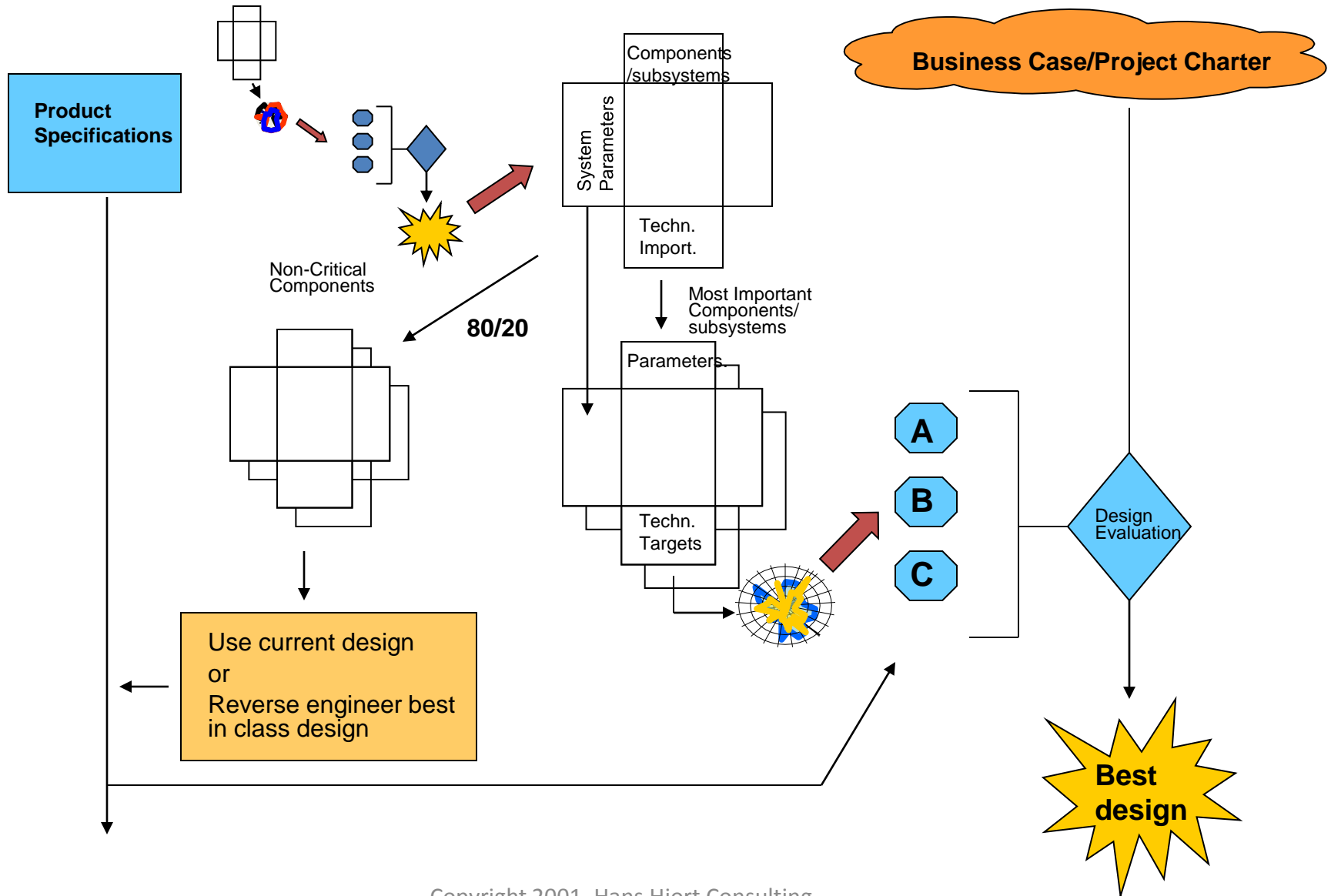
# Concept Validation

Are we on the right track?





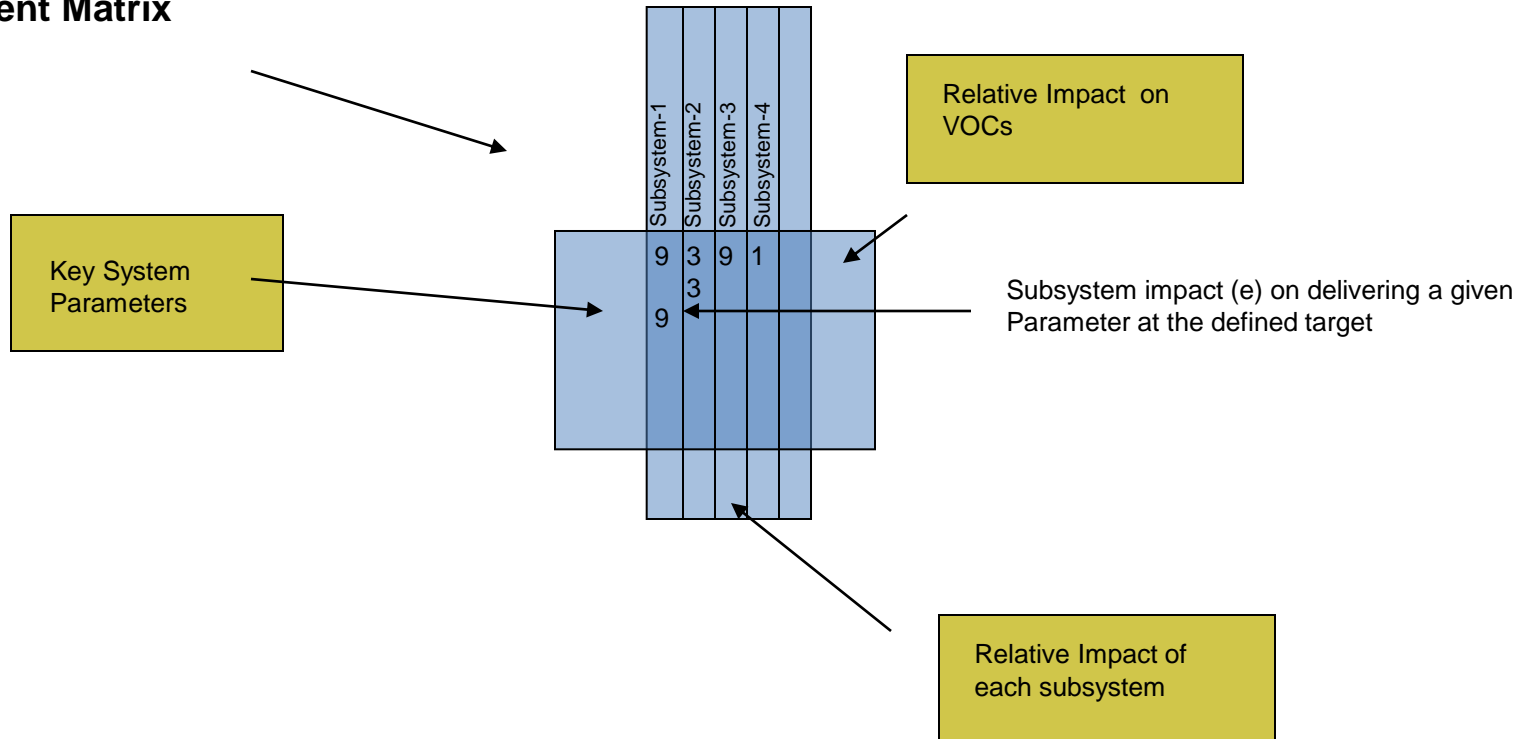
# Deploy The Voice Of The Customer...



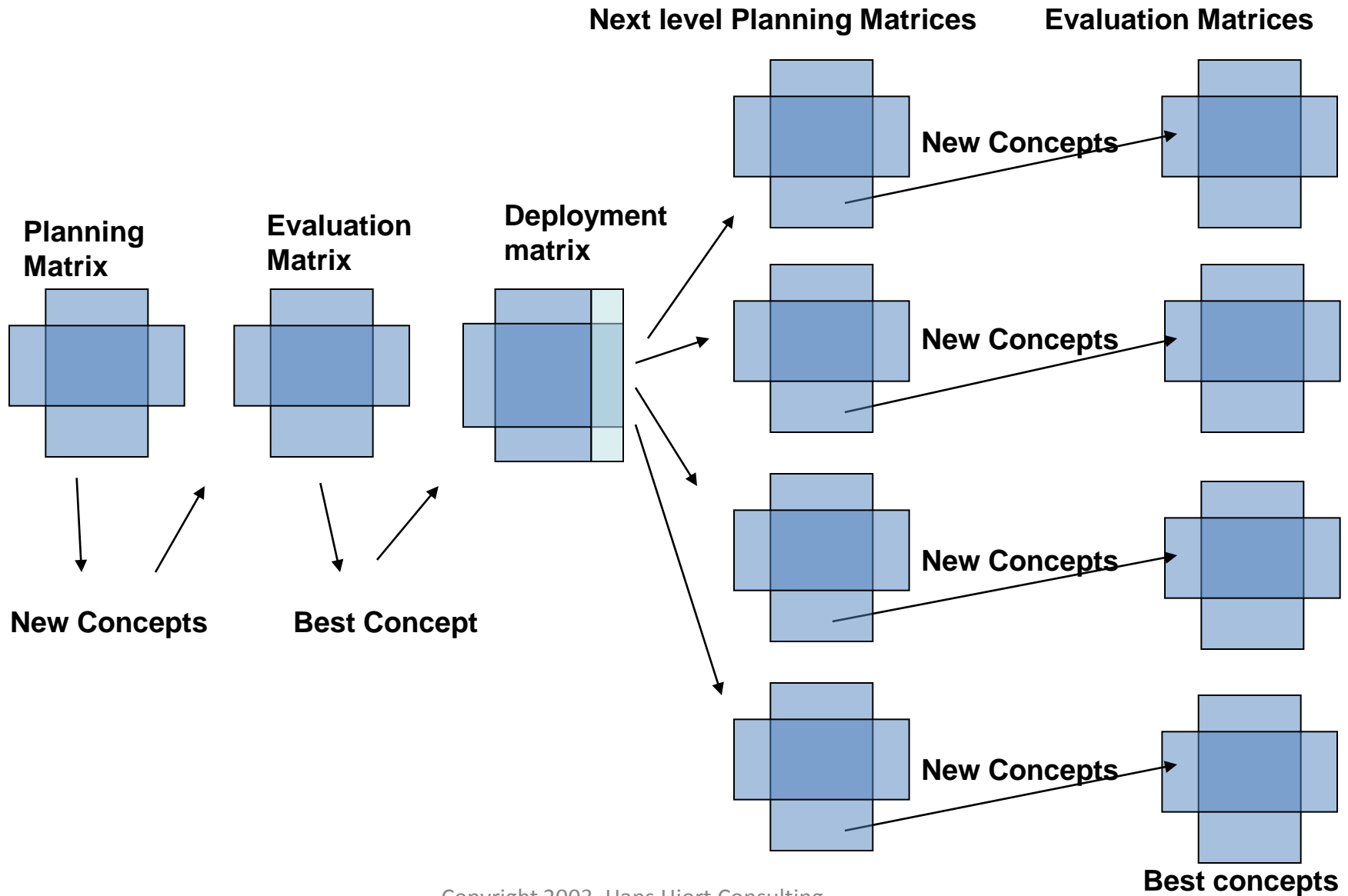
# VOC Cascading Process

## Create Deployment Matrix

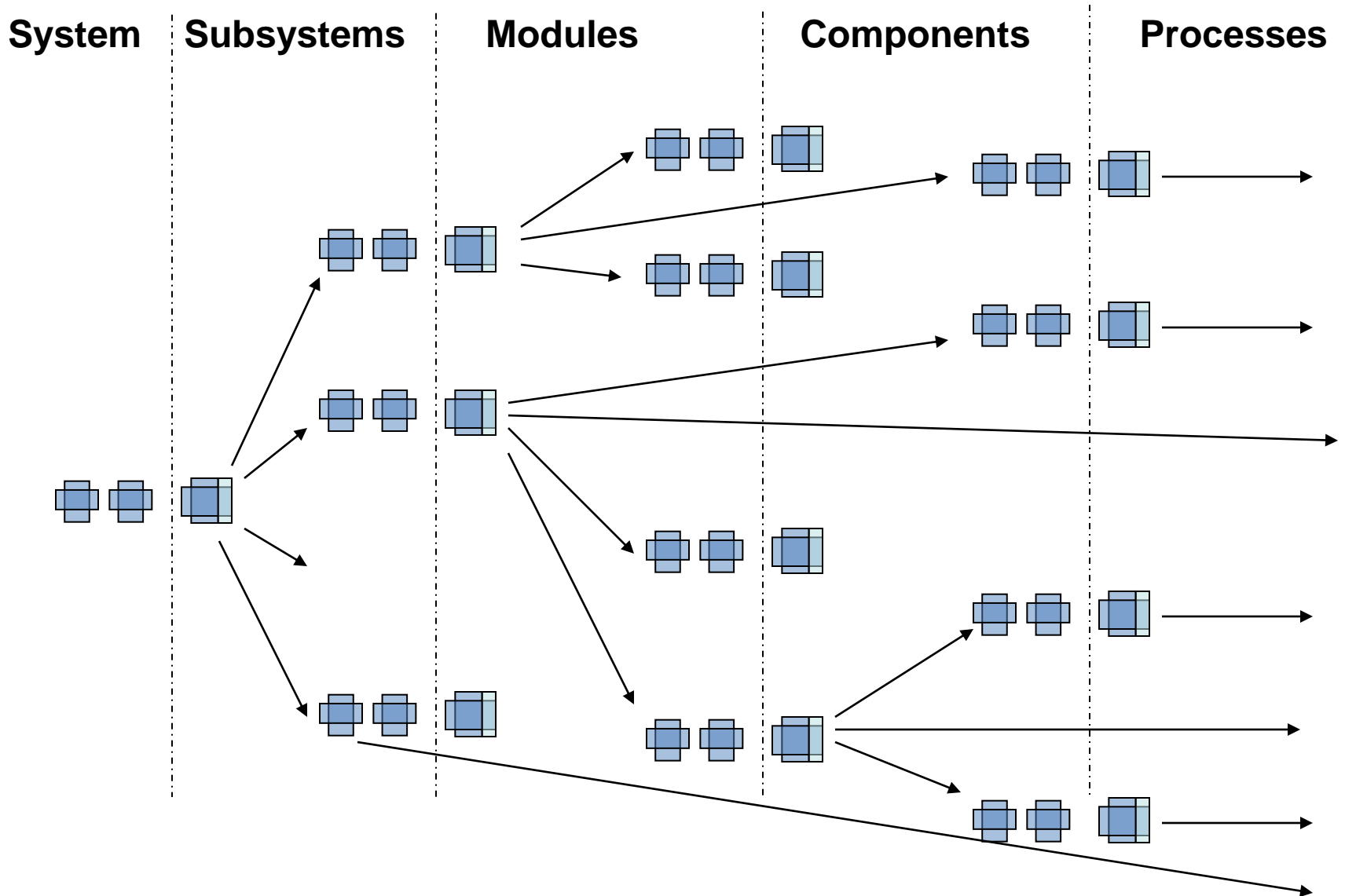
### Deployment Matrix



# VOC Cascading Process (1)



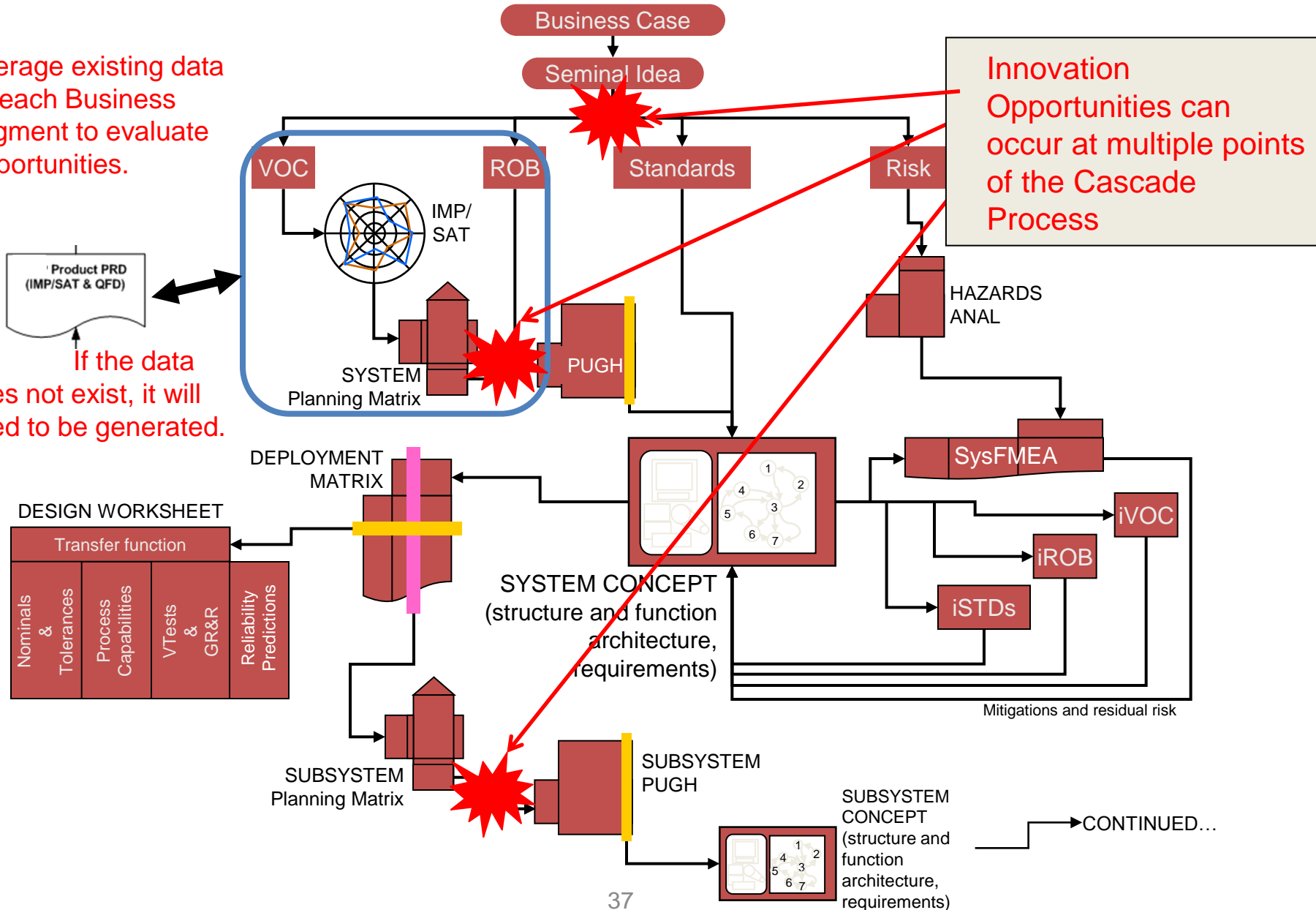
# VOC Cascading Process (2)



# Requirements Cascade

leverage existing data for each Business Segment to evaluate Opportunities.

If the data does not exist, it will need to be generated.



For more information and discussions about this presentation contact:

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