Inventive Problem Solving for Customer Value Creation
- Raja Bavani

Agenda

- Introduction & Case Study
- Systems Thinking, Inventive Problem Solving, 9 Windows
- Customer Value Management
- Value & Value-Based Practices
- Our Approach & Findings
- Summary
- Q&A

OPD Environment – Key Characteristics

Technology	• Current and Next Generation • Multiplatform, Highly Dynamic and Evolving
Product	• Tight Budgets, Speed to Market, Very high COQ • Unbounded Users, Unpredictable Scalability
People	• Deep Engineering Skills • Product Engineering Mindset
Process	• Home-grown / Agile or Lean • Lack of Detailed Documentation
Culture	• Technology Driven • Aggressive and Action Packed

For more info: http://www.mindtree.com/blogs

Case Study

The first project we started for Customer-A was technically very complex. It involved multiple platforms. Team members found it very challenging. They took complete ownership of the project in 12 months. Some of them moved out to other projects after 2 years. New team members got adequate help from senior team members. They started doing well within the first 3 months. Gradually, monotony seeped in and impacted the motivation of team members. However, this did not affect customer satisfaction. Year after year, customer satisfaction moved up from 90% to 100%.

The team size remained almost the same during the first 2 years. During the 3rd year global recession impacted Customer-A's product sales. This challenged the team members further. Because of budget cuts, they had to work on the same modules and features and improve the quality. Nothing new came on their way!

Our team members wanted to do something better – something that is challenging, rewarding and fulfilling.

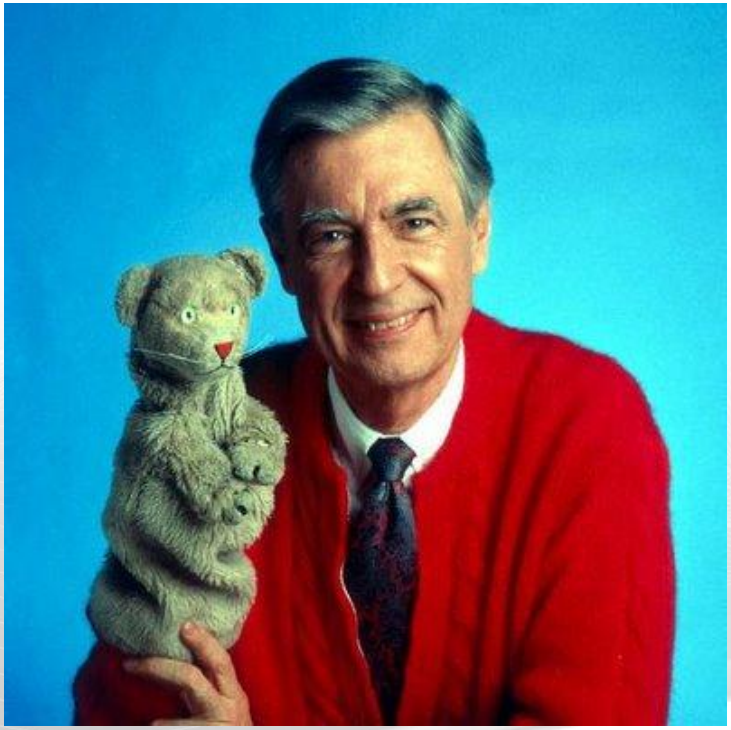
Case Study (Continued.)

One of the team members aspired to go abroad and work with another customer. Other team members felt that this project was not providing any learning opportunities or challenges. They wanted to get staffed in other projects. Two team members resigned to seek better opportunities elsewhere.

The Project Manager was overwhelmed with questions and concerns. The Delivery Head did not want to lose revenue.

Questions: Is there a problem that needs resolution? If yes, what is the problem? Who are the stakeholders? What is the resolution? Awards? Appreciation? Benefits? Training? Are you able to relate to this situation?

Our Attitude can make problem seem different !



"Often, problems are knots with many strands, & looking at those strands can make a problem seem different."

- Mr. Fred Rogers

Mr. Fred Rogers with Daniel Striped Tiger

Ref: http://pbskids.org/rogers//all_ages/thoughts3.htm

Systems Thinking

- Every part has a purpose within a system
- Every system has a purpose within a larger system
- All parts of a system are required in a specific sequence or order for the whole system to perform as expected
- Stability improves through adjustments based on feedback

Take a holistic approach, consider the big picture instead of solving problems in isolation.

TRIZ – Theory of Inventive Problem Solving

TRIZ relies on

- Understanding the problem as a system
- Devising an ideal solution first
- Solving contradictions

TRIZ is empirically based - It is designed to overcome Psychological Inertia. Psychological Inertia is based upon habits, our education, paradigms, internal processes, past successes, past failures and “we have always done it that way”.

Other methods (not empirical but emotional)

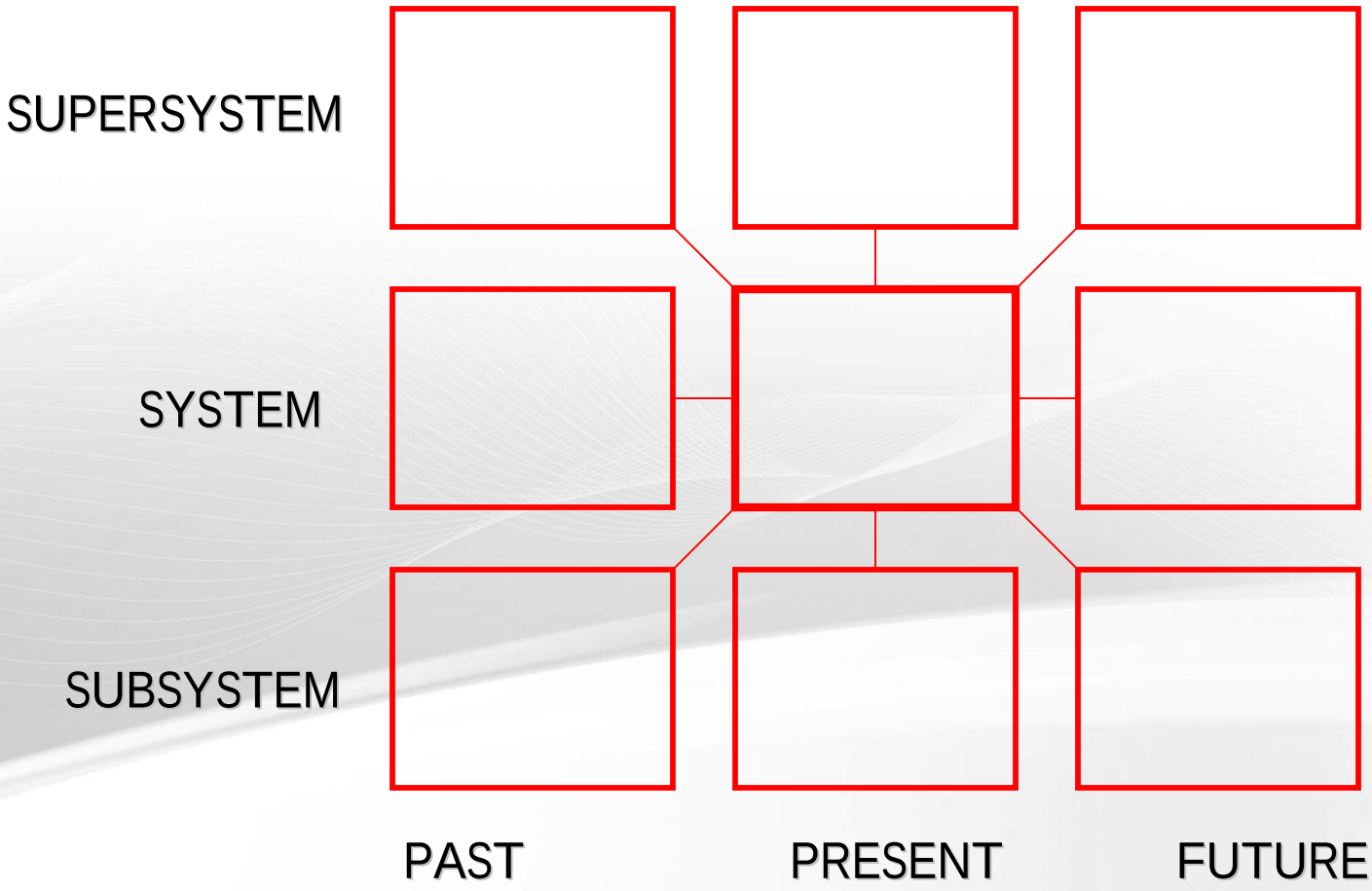
- Brainstorming
- Lateral Thinking
- Neurolinguistic Programming(NLP)
- Mind Mapping

IFR – Ideal Final Result

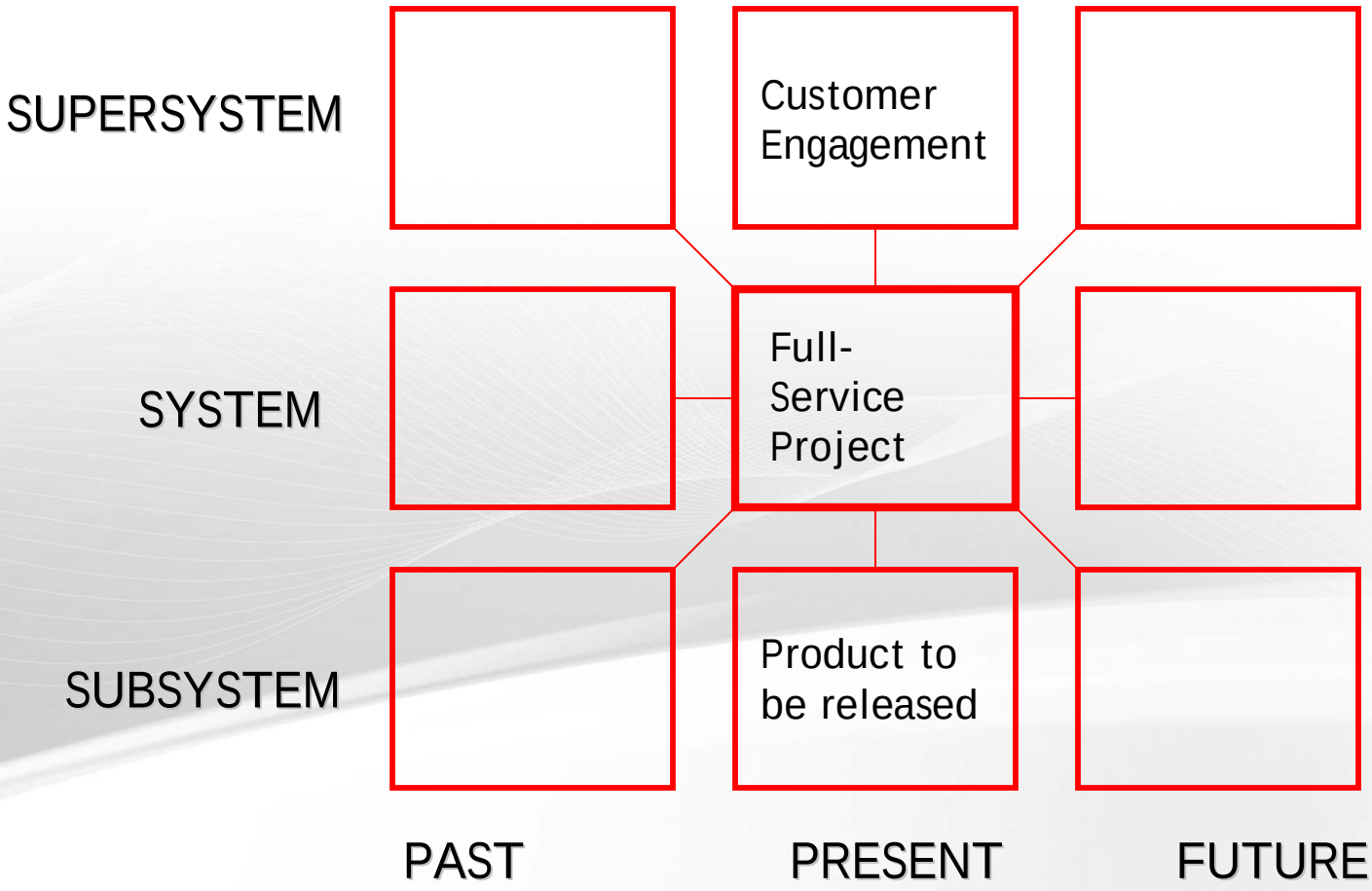
- IFR is the imagined ultimate solution created using imagination not knowledge

Note: Change the problem to an assertion. Declare the future possibility without proof!

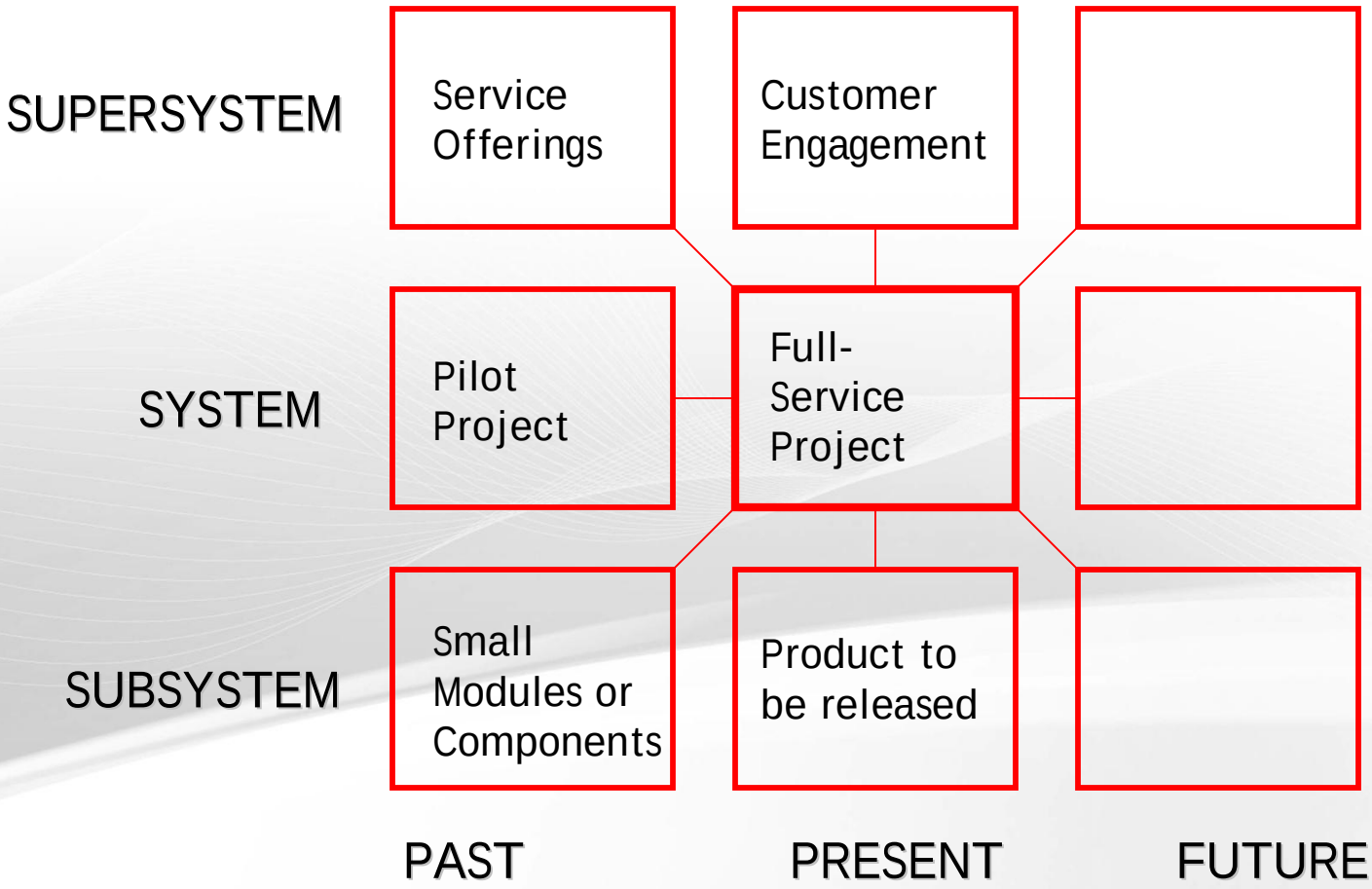
9 Windows



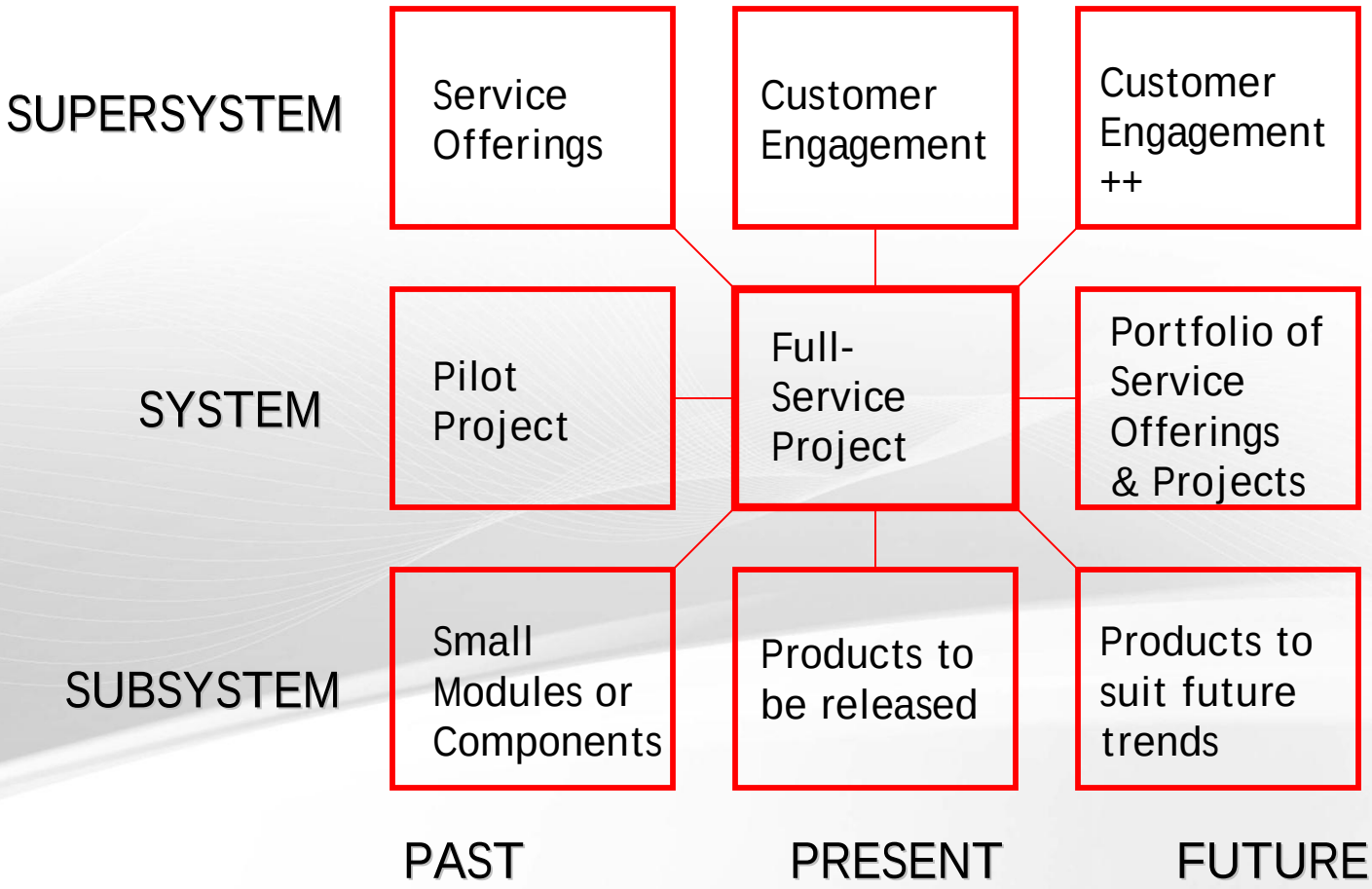
9 Windows - IT Industry Context



9 Windows – IT Industry Context



9 Windows – IT Industry Context



Questions

What can we learn from Systems Thinking?

Can Inventive Problem Solving help us solve the problem in our case study?

If yes, what is the “Ideal Final Result”?

Do we need just an idea to solve a problem? Or Do we need a thorough execution plan or implementation plan?

Is TRIZ limited to other engineering disciplines? Or can we leverage TRIZ principles to solve our problem?

TRIZ Principles (for our problem context) 1/2

Principle	Brief Description	Application
2. Taking Out	Single out the necessary part	Separate the People from the Problem
12. Remove Tension	Create conditions to compensate, reduce or eliminate tension	Force-Field Analysis, Empathy from leaders, Collective decisions
24. Intermediary or Mediator	Use an intermediary tool or process	Use a homegrown tool before investing in a COTS tool
36. Paradigm Shift	Use phenomena occurring during phase transitions (tech trends, economy shifts, etc.,)	Leverage industry trends to get buy-in
1. Segmentation	Divide a system in to independent parts	WBS of a large project, Different groups of categories of test cases

TRIZ Principles (for our problem context) 2/2

Principle	Brief Description	Application
3. Local Quality	Make each part of a system fulfill a different and useful function	Identify and staff specialists in COE
10. Prior Action	Perform the required change before it is needed	Make proactive suggestions before it is asked for
13. The Other Way Around	Invert the actions used to solve a problem	Visualize a problem before your customer experiences it
19. Periodic Action	Instead of continuous action, use periodic or changing actions	Apply iterative methods
35. Parameter Changes	Change in physical state, degree of flexibility, emotional bonding	Provide ownership in decision making, Change the way of doing things

Software Engineering & Customer Value Management

- Mature disciplines (such as Consumer Electronics, Telecom, Manufacturing, etc.) focus immensely on Customer Value Management (CVM)
- Software Engineering is a maturing discipline that has seen several value-neutral approaches or initiatives
  - 'One-size-fits-all' (Pre Y2K)
  - Organizational Structures – Strategic Business Units, Industry Groups
  - Process Models – ISO, CMM, etc. (mid 90s and later)
  - Professional Certifications – PMI's PMP, etc., (Post Y2K)

Objective: To strengthen delivery capabilities (and hence to ensure on-time, high-quality deliverables).

Value

‘Financial or monetary worth of something (or market price)’

‘Relative worth, utility or criticality’ or ‘something intrinsically desirable’

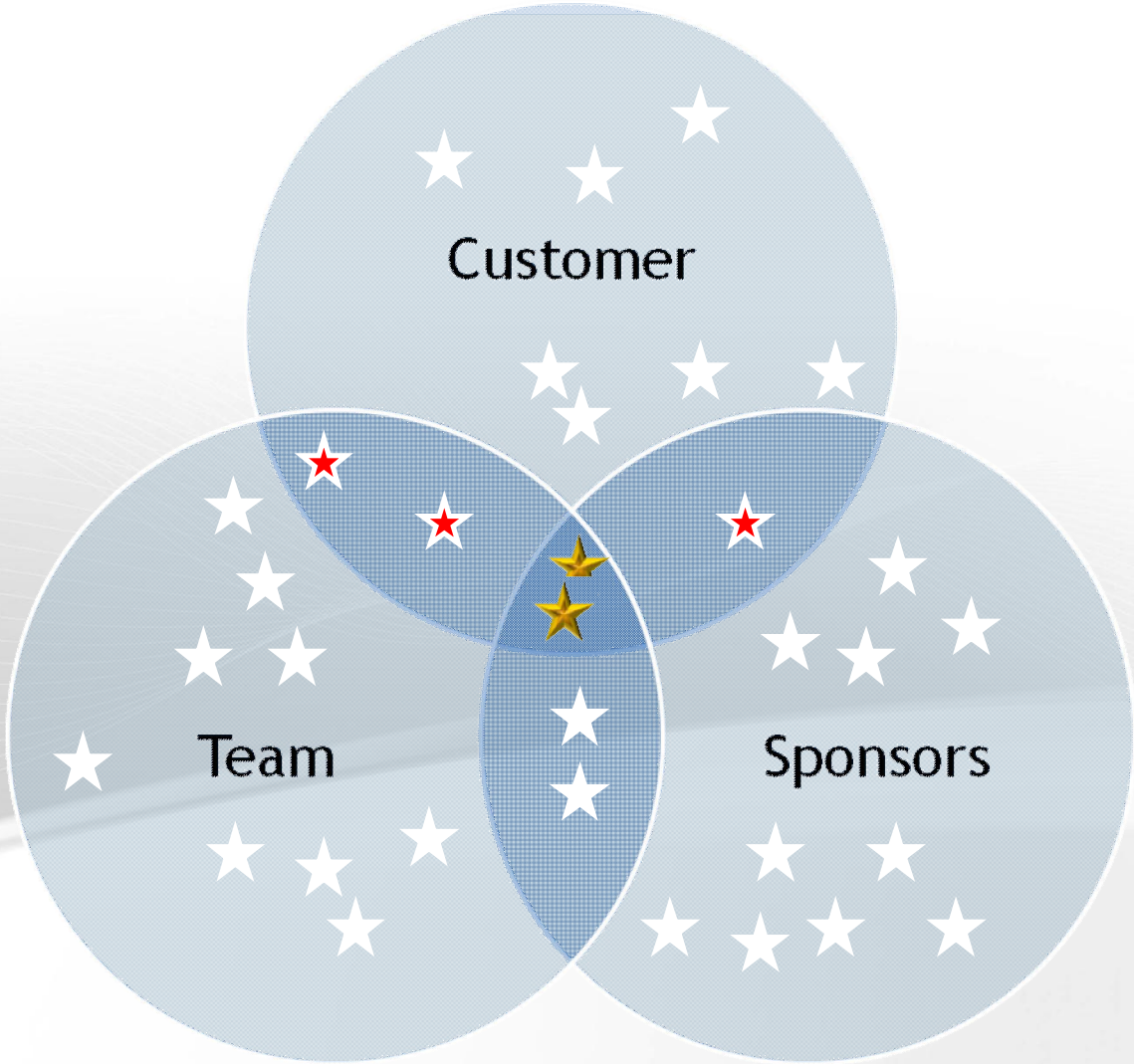
Value-Based Practices

- In our industry, every project turns out to be unique
- Stakeholders of projects are different and their values are different too
- In value neutral environments value-based practices can be derived by means of initiatives that become successful through repetitive implementation and continuous improvement.

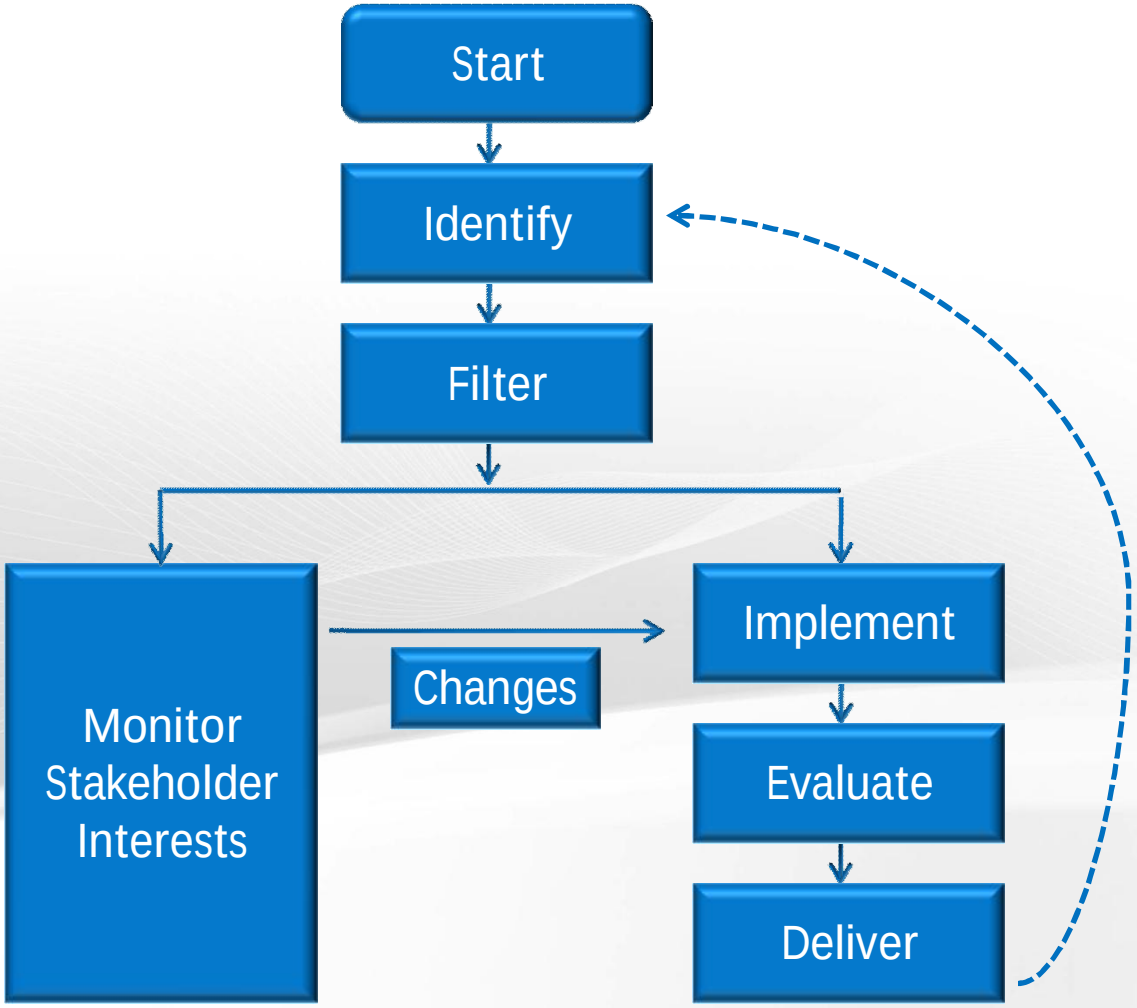
Challenges in Implementing Value-Based Practices

- Identification of Stakeholder Values
- Monitoring Changes in Values and Taking Course Correction
- Value Creation in a Turbulent Ecosystem
- Customer Management & Satisfaction Surveys

The sweet spot of stakeholder values



Our Approach



Findings 1/2

- *Value creation initiatives leveraged into mainstream services yield long-term benefits.*
- *It is mandatory to monitor the interests of all stakeholders while implementing any value creation initiative.*
- *In case of project turbulence such initiatives do not provide timely results. In certain cases, the results are seemingly abysmal.*
- *A value creation initiative may be short lived when business critical decisions impact some of the underlying parameters*

Findings 2/2

- *Project teams require a deep understanding of the business of customer and a right mix of skills to evaluate the applicability of right technology in order to maximize returns in such initiatives. In our experience we have found a direct correlation between the quantum of value add and the age of customer relationship.*

- *Value creation is not a number crunching approach aimed at measuring cost savings and profit margins alone. It is significantly a people-oriented approach. Building a culture of value creation is necessary to uplift practitioners in order to implement successful initiatives.*

Summary

- Customer Value Creation is an evolving discipline.
- Value creation can start with the right mix of technical expertise coupled with business acumen.
- There will be ongoing challenges in creating customer value.
- Inventive Problem Solving can help us create customer value.