

# I-TRIZ INNOVATION SERVICES



# OUR TEAM

## IDEATION International Inc. Team



+ International University Network (US, Canada, etc.)

## LUSI-Zentrum e.G.

+ European University Network

- UniKassel, Germany
- TU Poznan, Poland
- TU Budapest, Hungary
- TU St.-Petersburg, Russia
- TU Kiev, Ukraina
- TU Bucharest, Rumania
- etc.

[www.ideationtriz.com](http://www.ideationtriz.com)



[www.sixsigma-24.de](http://www.sixsigma-24.de)

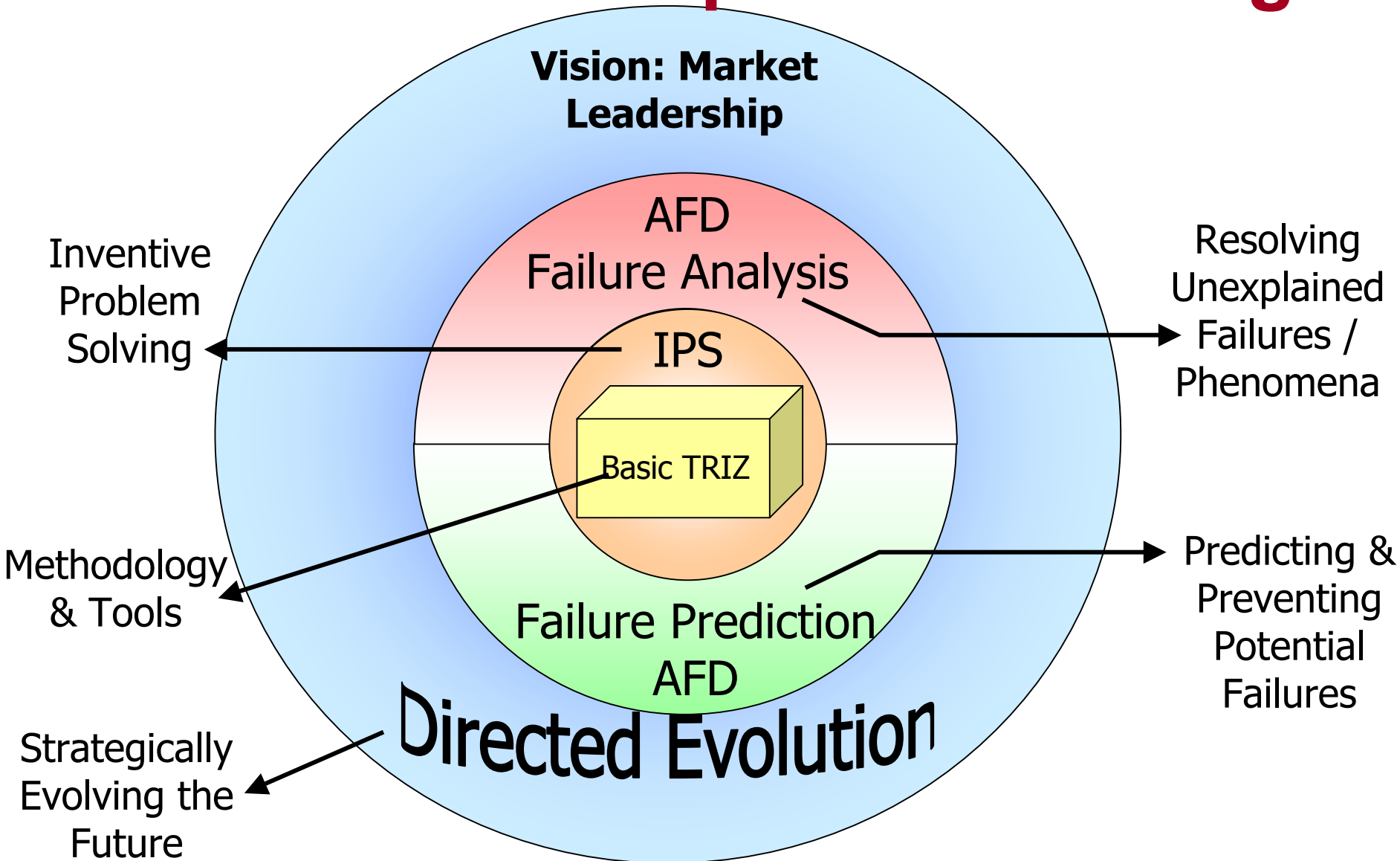
**LUSI - Zetrum e.G.**  
Prof. Dr. Elena A. Averboukh

# OUR PORTFOLIO

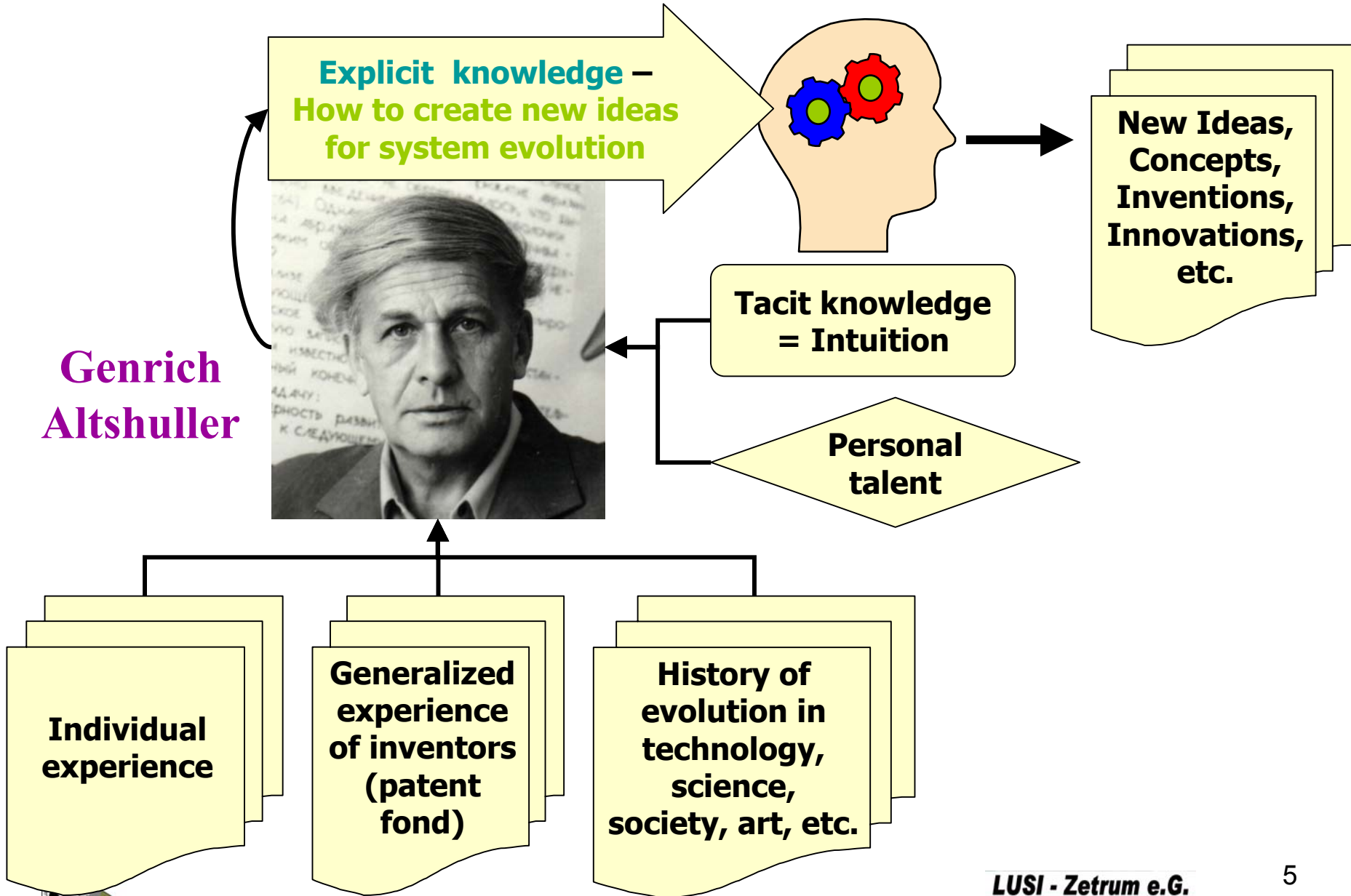
- **Market Leadership I-TRIZ Package**
  - ✓ I-TRIZ R&D and Innovation Knowledge –Base Management
  - ✓ Software Knowledge-Based Tools
  - ✓ Innovation Studies and Services
  
- **Innovation Project Consulting/Coaching**
  - ✓ Innovative Problem Solving
  - ✓ Process Innovation
  - ✓ Product/Service Innovation
  - ✓ I-TRIZ & Six Sigma
  - ✓ Cost-to-Serve Reduction
  
- **Team-Training and Certification**



# Market Leadership I-TRIZ Package

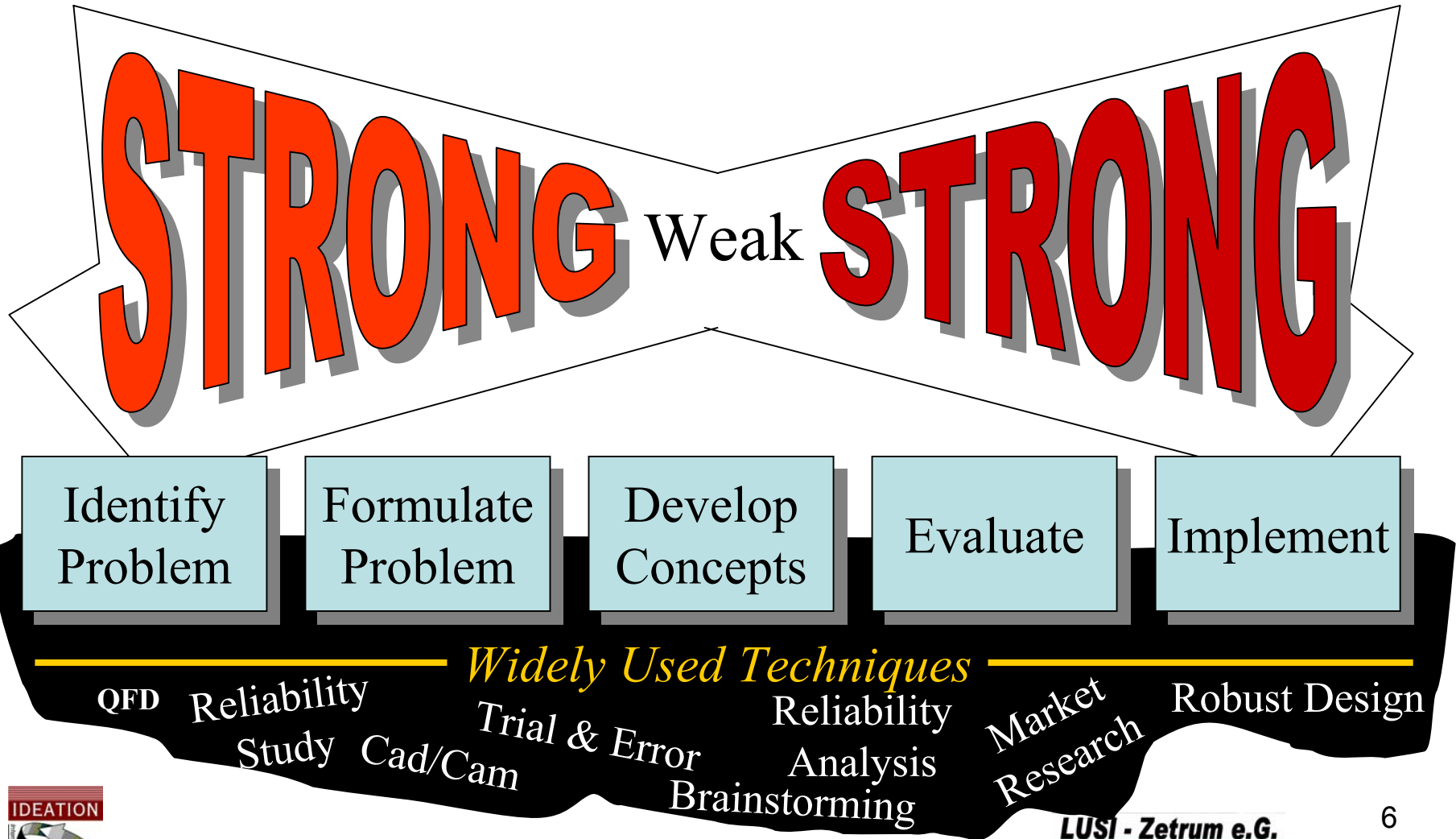


# TRIZ-based Idea Generation



**Genrich  
Altshuller**

# Traditional Innovation Process



# The Added Value of TRIZ

**STRONG**

Identify  
Problem

Formulate  
Problem

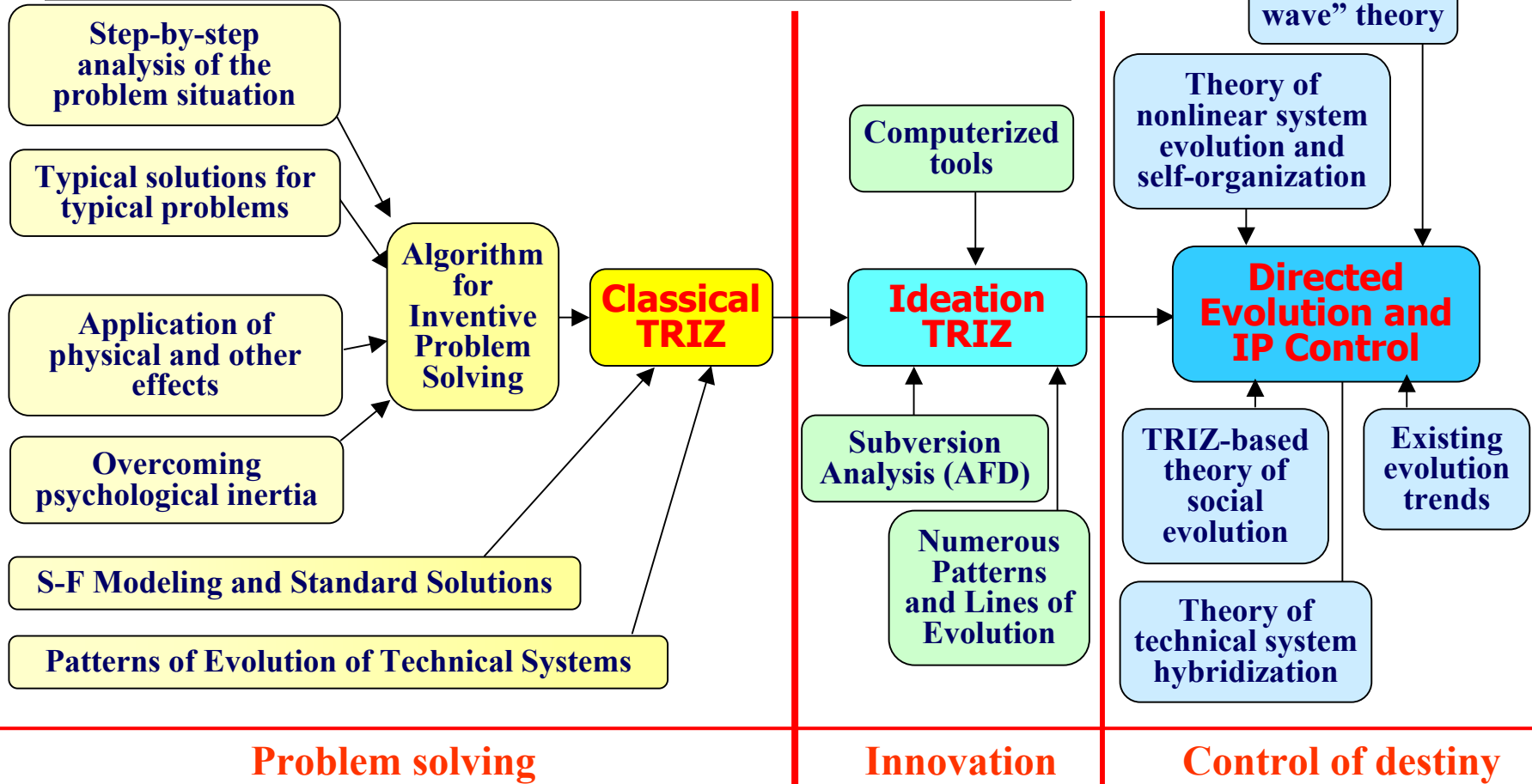
Develop  
Concepts

Evaluate

Implement

# From Classical TRIZ to Ideation TRIZ

## Evolution of the TRIZ Methodology



For exceptionally committed people

For an average individual



Developed by Altshuller

Developed by Kishinev School / Ideation

LUSI - Zetrum e.G.

Prof. Dr. Elena A. Averboukh

# Starting Point of Our Projects: Identify Your Engineering Nemesis

- Systemic technological problem
- Long-standing technological problem
- Absence of a simple, economic solution
- Breakthrough required
- Competitor's blocking patent
- Trade-off is inadequate
- Undifferentiated product
- Excessive innovation cycle time
- Inadequate profitability



# Structured Process for Inventive Problem Solving

Step	Action	Contents	Software Supported
1	Document the problem	Complete and analyze the Innovation Situation Questionnaire (ISQ)	✓
2	Formulate the problem	Develop exhaustive set of Directions for Innovation	✓
3	Prioritize Directions for Innovation		✓
4	Develop Concepts	Develop an exhaustive set of Solution Concepts utilizing various knowledge-base tools	✓
5	Evaluate Results & Plan Implementation	Select Solution Concepts and develop an implementation plan	✓

# Basic Patterns of Evolution(H.Altshuller)

Patterns of Evolution:  
Common threads  
between evolving  
systems.

1. Stages of Evolution
2. Evolution toward Increased Ideality
3. Non-Uniform Development of System Elements
4. Evolution toward Increased Dynamism and Controllability
5. Increased Complexity Then Simplification
6. Evolution with Matching and Mismatching Elements
7. Evolution toward Micro-level and Increased Use of Fields
8. Evolution toward Decreased Human Involvement

# I-TRIZ Directed Evolution

A systematic approach targeting the identification of a comprehensive series of potential scenarios of evolution of:

- Products/Services/Processes
- Technology
- Organization
- Industry
- Market

using



***400 Patterns in I-TRIZ DE Knowledge-Basis!!!***



# Directed Evolution: Building Sustained Competitive Advantage

*By developing a comprehensive set of logically sequenced scenarios that enables the planning and on-going development of technological and business systems.*

# Strength





# ITRIZ and Future Vision

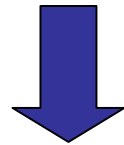
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## Bank of Evolutionary Alternatives

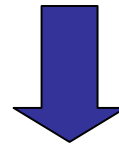
### Business Evolution

# Lines of Evolution: Matching to Market Readiness

Technology + Market



Opportunity

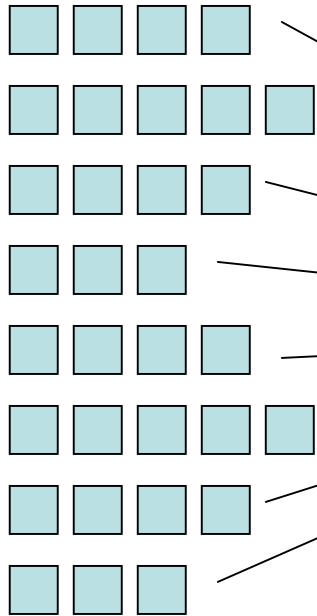


Selection Process

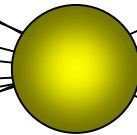
Matching to market readiness utilizes lines of evolution plus company understanding of the marketplace.

# Relationship of Lines of Evolution to DE

History of Technology



Product or Process

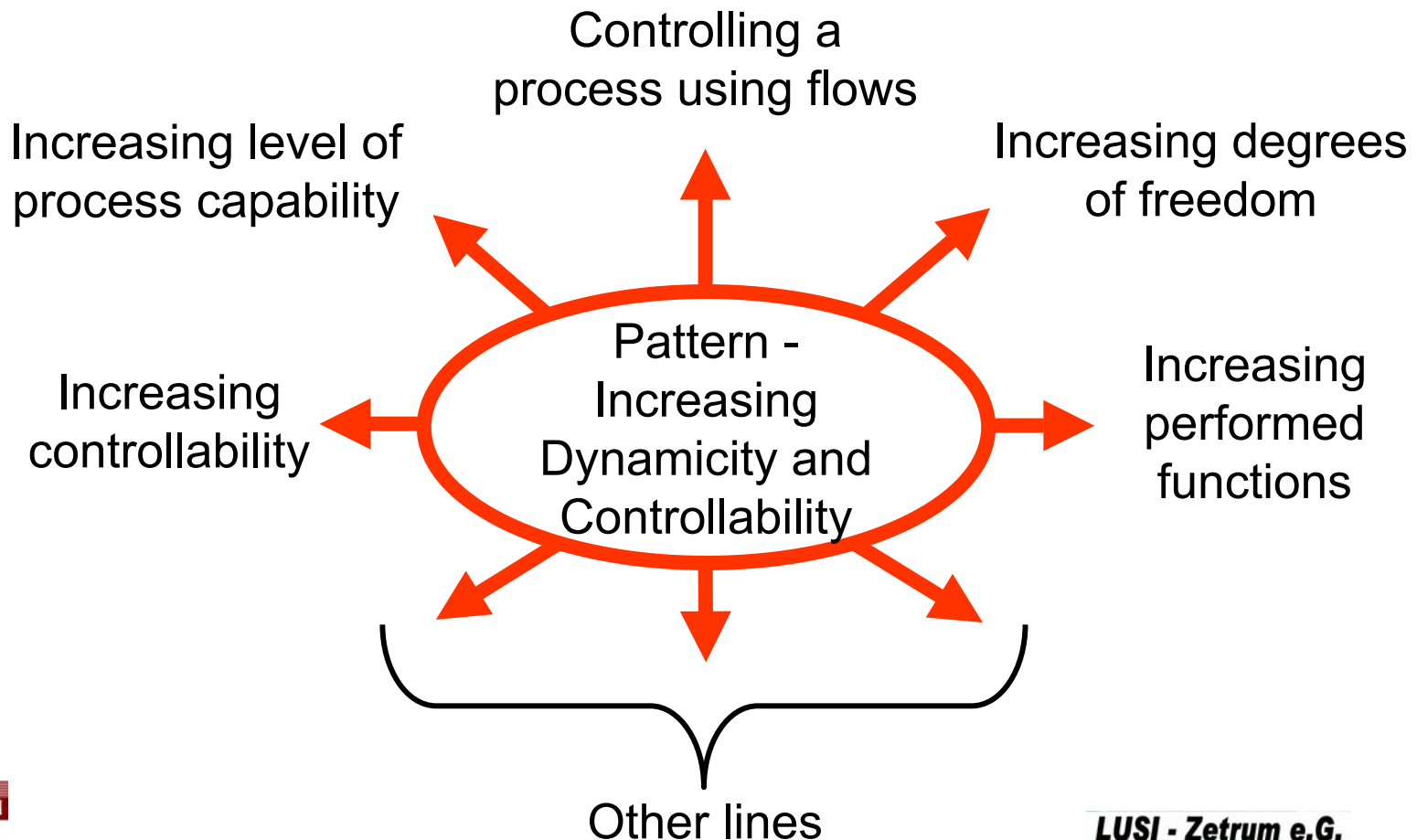


- Idea Idea
- Idea Idea Idea Idea Idea
- Idea Idea Idea
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- Idea
- Idea Idea Idea Idea Idea
- None
- Idea Idea

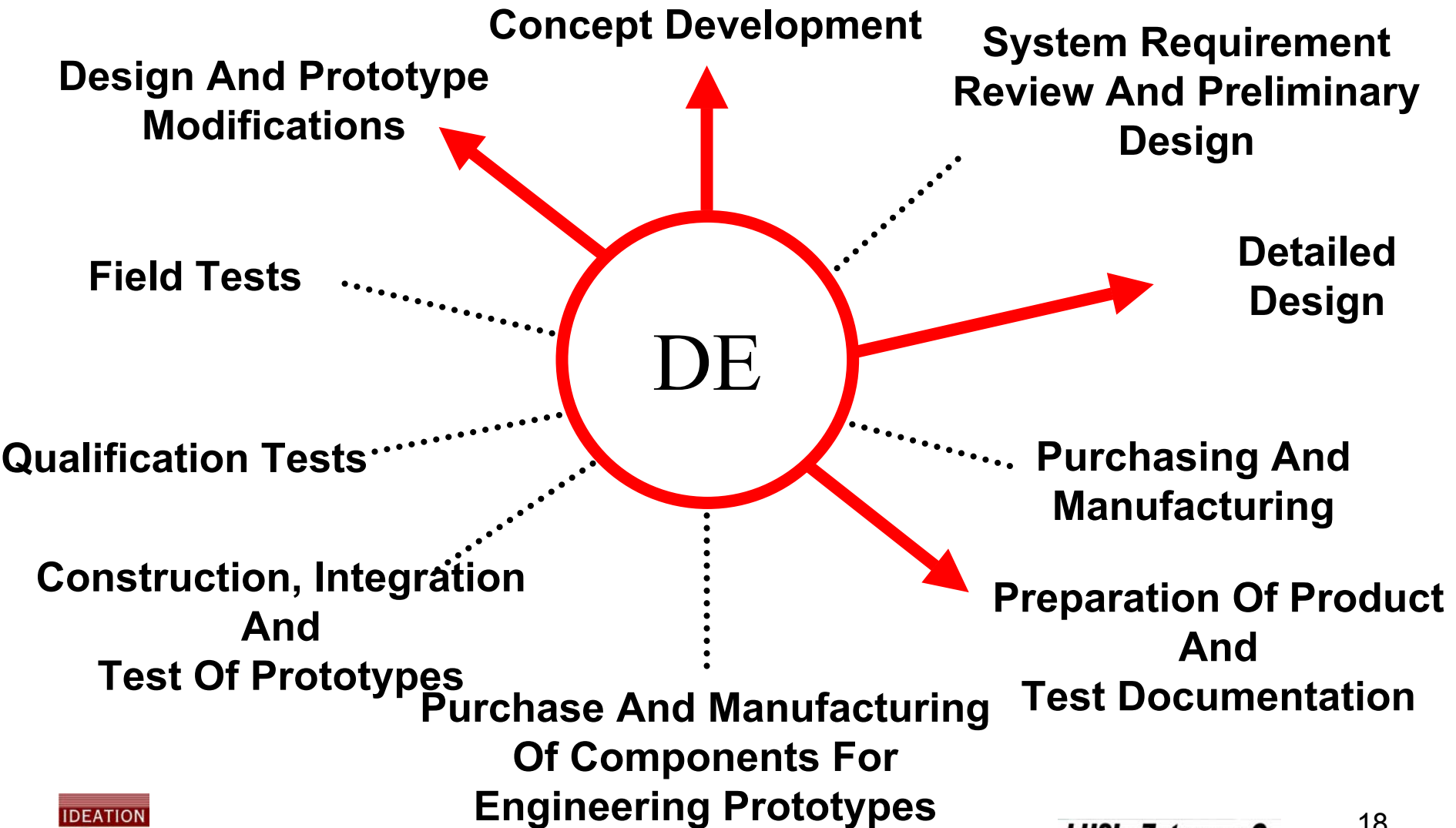


# Refinement of Patterns: Lines of Evolution

Patterns and Lines  
of Evolution:  
Hierarchical  
structure.



# Potential Impact Areas -- DE



# Washing Processes

## Directed Evolution: Example



# Washing Processes and Equipment Evolution Position

**Stage 0** - a system does not yet exist but important conditions for emergence are being developed

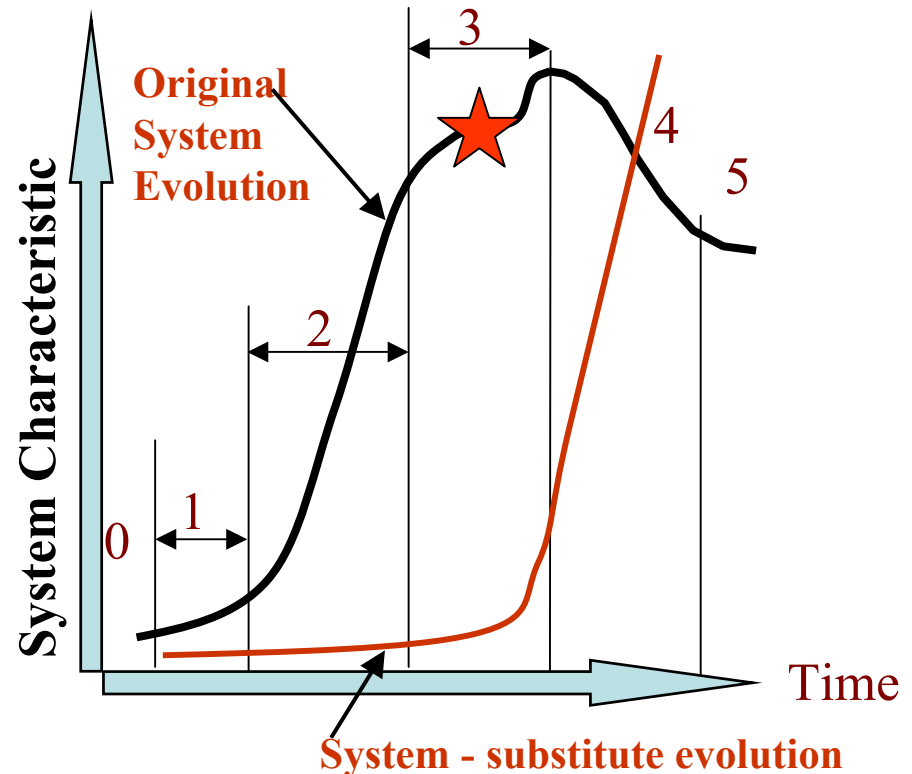
**Stage 1** - a new system appears due to a high-level invention and begins slow development

**Stage 2** - begins when society recognizes the value of the new system

**Stage 3** - begins when the resources of the system's original concept is mostly exhausted

**Stage 4** - begins when a new system or next system generation emerges to replace the existing one

**Stage 5** - begins if the existing system is not completely replaced by the new one as the existing system still has a limited area of application

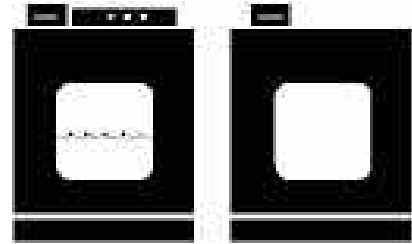
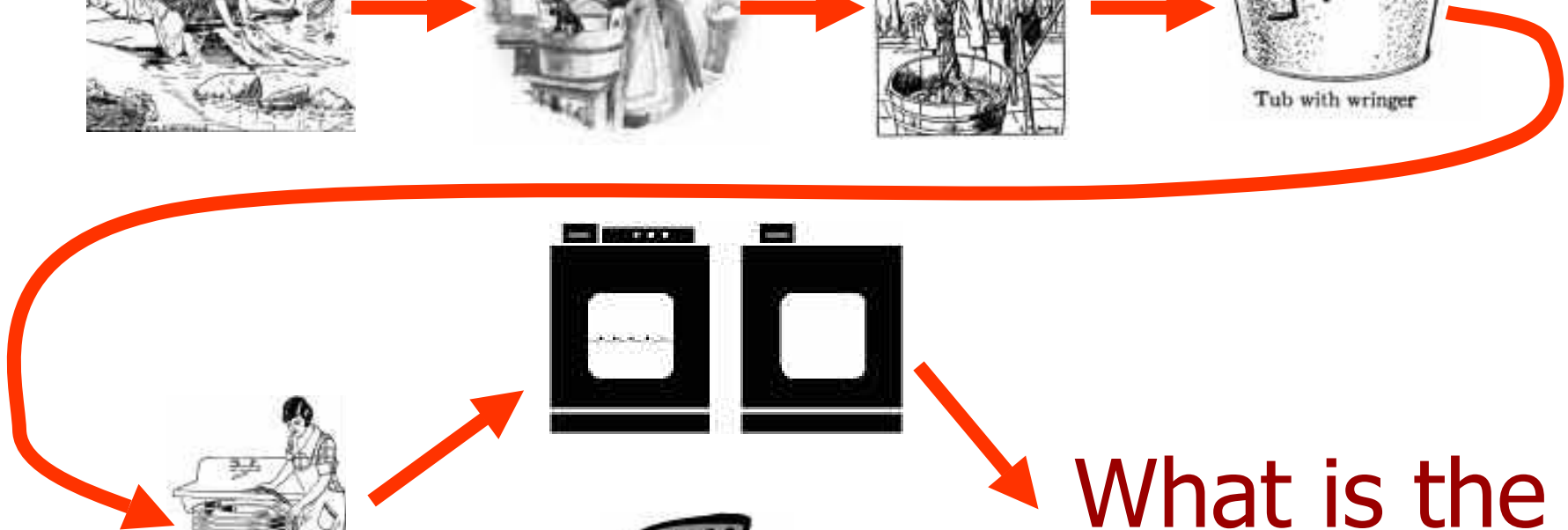


**Danger!** Small improvements at this stage under competitors pressure can look like good long term solutions. Be careful, it's likely only "agony activity" before death

# Typical Directed Evolution Project: Washing Processes Evolution



Tub with wringer



What is the  
Next Step?

# Structured Process: Directed Evolution

## 1. Defining the Objective

## 2. Understanding the Present (Innovation Situation Questionnaire)

## 3. Researching the Past and Understanding Evolutionary Patterns

## 4. Envisioning the Future

- ✓ Using Patterns and Lines of Evolution (8 Basic + 400 Ideation IP)
- ✓ Matching to Market Readiness

## 5. Defining the Ideal (Desired) Direction to Pursue

## 6. Resolving Technological Problems

- ✓ Ideation / Invention / Innovation

## 7. Making Decisions

- ✓ Assessing and Reducing Risk / Predicting and Preventing Failures

## 8. Protecting Intellectual Capital

- ✓ Identifying Appropriate Patent Strategy / Building Patent Fences

## 9. Successfully Implementing

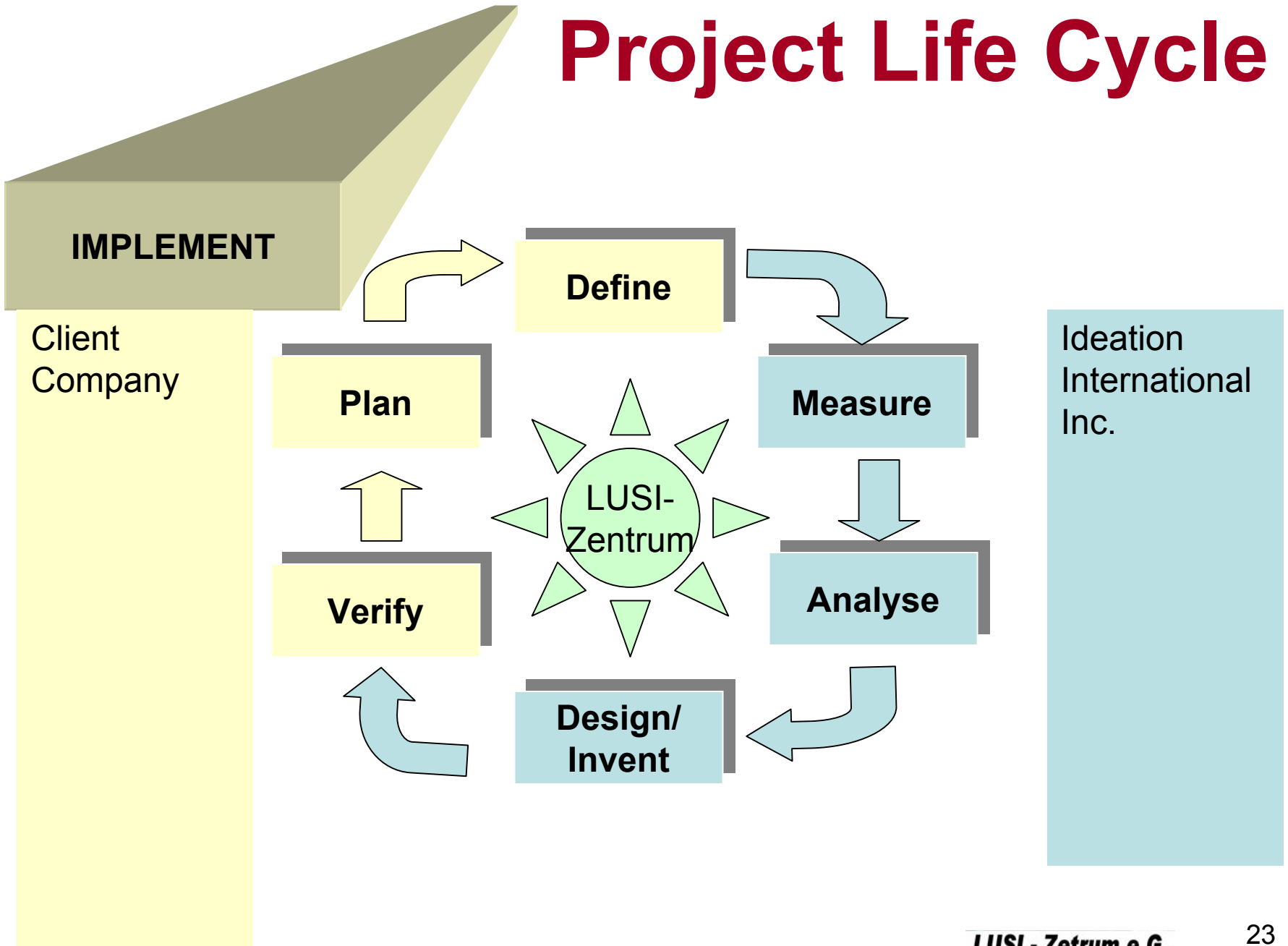
- ✓ Solving New Problems / Analyzing and Eliminating Failures

Optional Service

Optional Service



# Project Life Cycle



# Cooperation Forms

**Client Company**

LUSI-Zentrum

Ideation International Inc.

## Decision Making Team

- Define Application Area
- Appoint Core Competence Expert
- Determine data availability/access
- Evaluate results
- Decide on „breadth vs depth“analysis

## Core Competence Expert

- Work on the ISQ
- Provide with data/information

## Facilitate Following Workshops

- Define objectives & project scope
- ISQ Workshop
- Intermediate and final reviews

## R&D Team

- Perform DE Measure & Analysis
- Detailed Analysis
- Innovative Solutions

## Data Acquisition Team

- Develop concept for data collection
- Acquire data