THE Eli Project

Engineer of the Future =

Critical Thinker

Problem Solver

Inventions on Demand

Oct. 30.1979 - Oct. 15.2009

How to Have a Successful Career with Entrepreneurial Spirit as a Guideline

Participants

Currently scheduled Eli Project Participants:

University	Location
– Sami Shamoon College Of Engineering	Israel
– South Carolina Upstate	USA
– Vanderbilt University	USA
– Carnegie Mellon University	USA

Eli Project Objectives

1. Create a new generation of innovator meeting the needs of business
2. Establish a system for generating successful business startups
3. Prepare engineering and management students with the skills to be a critical thinker, problem solvers, and to invent-on-demand

Components of Creative Thinking

Adults' Thinking	Children's Thinking	"TRIZ" Thinking
Fear of contradictions, aspiration to avoid them	Non sensitiveness to contradictions, absence of aspiration to avoid them in their arguments	Love for contradictions, search for contradictions in problems. Understanding that revealing and formulation of an obvious contradiction is a step toward to its resolution
Metaphysical approach, consideration the objects, processes and phenomena separately, non systematically	Syncretism, aspiration to connect "everything with everything"	Systematic approach, aspiration to reveal the connections between remote objects, processes and phenomena, that often look as though they are not connected at all
Unorganized combination of various types of deductions, that are often applied erroneously	Traduction - type of deduction, erroneous from the classical logic viewpoint, were the deductions are made from the one specific fact to another specific one	Deductions by analogue, transition of deductions, ideas, solutions between various systems, with various levels of generality (an organized combination of induction, deduction, and traduction)
Combination of logic thinking and natural intuition	Natural, inborn ability to produce an intuitive deduction	Combination of logic thinking with purposely formed intuition
"Laws obedience" - use of intuitively known or verbalized laws	"Creation of laws " -spontaneous search and development of intuitive and verbalized laws	Purposeful search and development of laws; verbalization of the intuitive laws
Attempts to brain storm the difficult problem from one shot, retreat and giving the solving up in the case of failure	Substitution of the problem. If a child is not able to solve a problem, he will purposely modify the conditions and the rules and than will solve the problem, that is possible for him to solve	Substitution of the problem by another one, that can be solved by certain rules.

The World – 258 countries

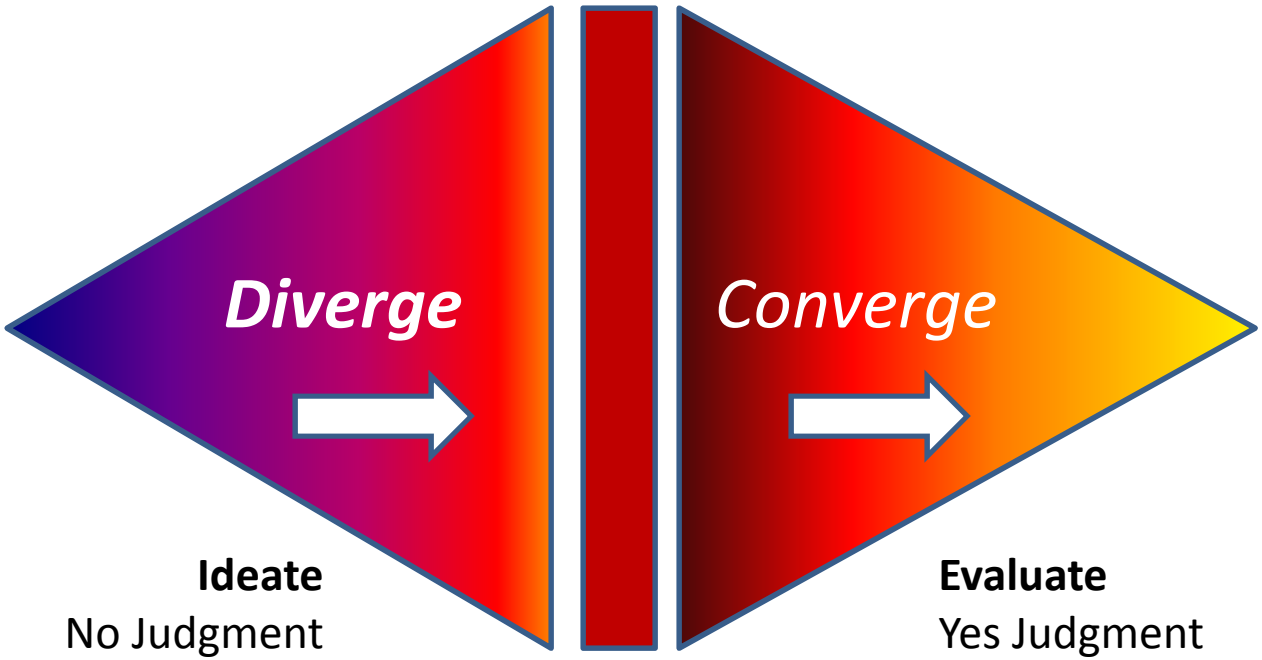
7 Billion people as of October 30, 2011 (8 AM EST)

Functions of the Brain

- Absorb
- Retain
- Diverge
- Converge
  - » Min Basadur

Process skills

2002 Basadur Applied Creativity Model



Ideate
No Judgment
No Logic
Relax
Quantity
Stream of ideas
Radical ideas
Think in pictures
Build into idea fragments

Deferral of Judgment
Separate Divergent and Convergent Thinking

Evaluate
Yes Judgment
Yes Logic
Clarify meanings
Generate relevant criteria
Focus on a few
Consider risky options
Modify and refine
Move good options forward

Process Skills

- Ideate
  - No judgment
  - No logic
    - Relax
    - Quantity
    - Stream of Ideas
    - Radical Ideas
    - Think in Pictures
    - Build onto Idea Fragments

Deferral of Judgment

Separate divergent and convergent thinking

- Evaluate
  - Yes judgment
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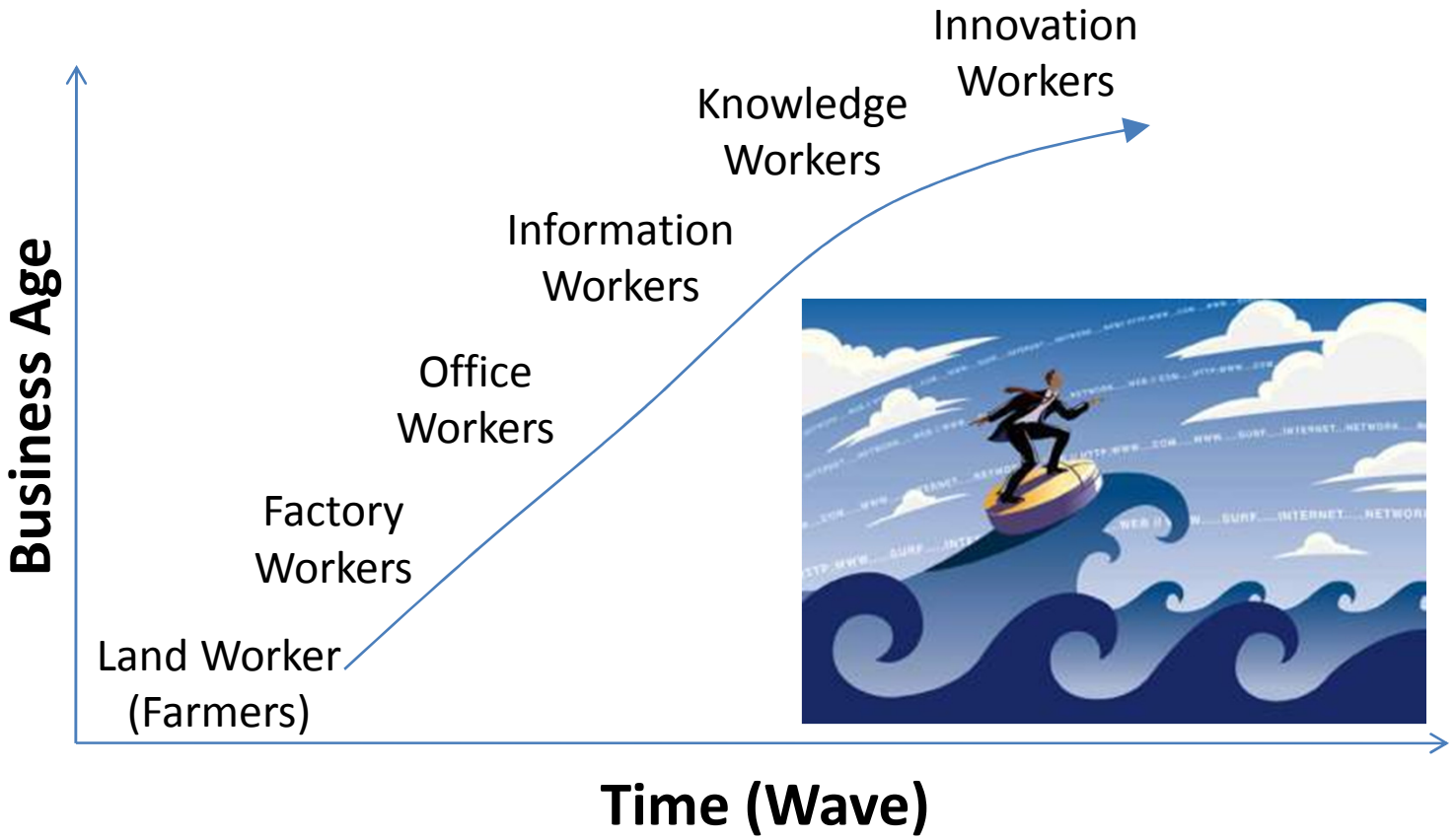
Business Age Evolution



Ideation Office of Innovation

Based on Ideation TRIZ (I-TRIZ) methodology

Inventive Problem Solving (IPS)

A systematic procedure for resolving tough technological problems, enhancing system parameters, improving quality, reducing cost, etc. for current generations of products and technologies.

Anticipatory Failure Determination (AFD)

Failure Analysis

A systematic procedure for identifying the root causes of a failure or other undesired phenomenon in a system, and for making corrections in a timely manner.

Failure Prediction

A systematic procedure for identifying beforehand, and then preventing, all dangerous or harmful events that might be associated with a system.

Directed Evolution® (DE)

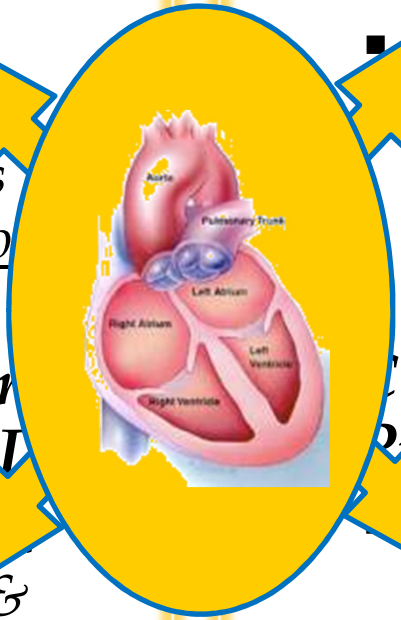
A systematic procedure for strategically evolving future generations of technological systems.

Control of Intellectual Property

A systematic procedure for increasing IP value and providing protection from infringement and circumvention.

Innovation Engine (I-TRIZ)

- ***Inventive Problem Solving (IPS)***
  - *Generate multiple innovative solutions meet consumer's spo expectations*
- ***Anticipatory Failur Determination (AFI***
  - *Reduce failure ris consumer's spok n & unspoken expectations*

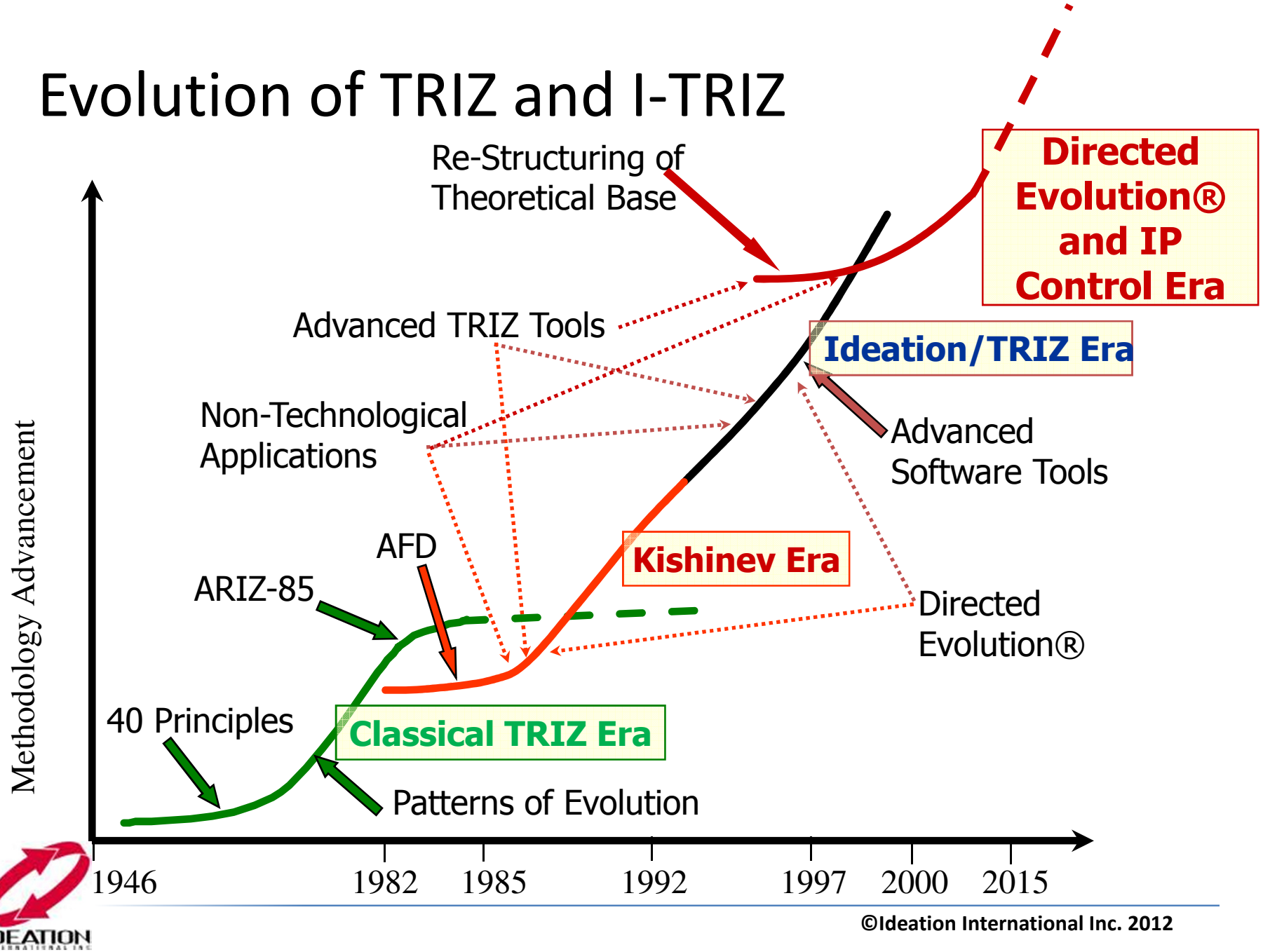


- ***Directed Evolution (DE)***
  - *rategically evolve future generations of technological systems & products to drive consumer excitement!*
- ***ontrol of Intellectual roperty (CIP)***
  - *laximize IP value and cr te patent fences around the directed evolution of technology & products*

IDEATION

Ideation's Vision Enablers

Evolution of TRIZ and I-TRIZ



Structured Innovation Process