

Systematic Innovation and Competitiveness

Interactive CTI Panel Presentation
SCIP – 2008, Rome

David W. Conley



TRIZ Activities

- Engineering Program Manager - **Intel**
 - TRIZ Projects
 - Technical and Business
 - TRIZ Program Development
 - Organization Integration
 - Program Integration (ex. TRIZ and Lean)
 - TRIZ Training
 - Competitive Analysis
- Executive Committee Member - **Altshuller Institute for TRIZ Studies**
- Consultant - **Innomation, LLC**

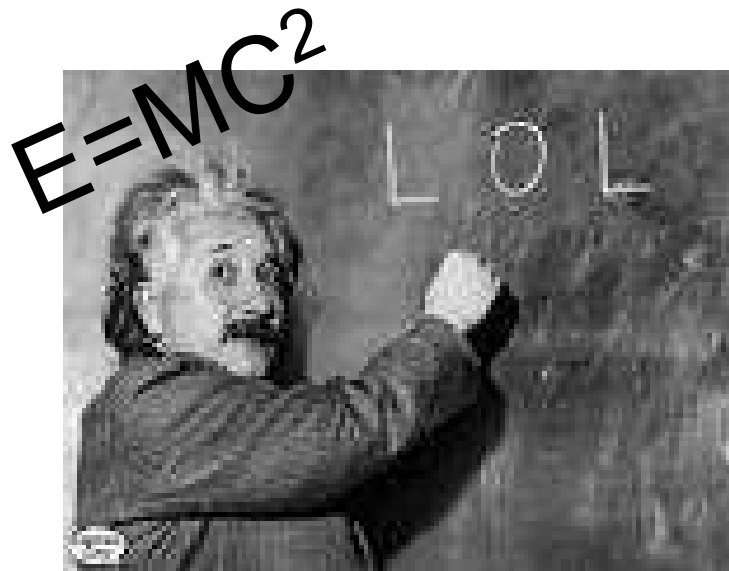


Systematic Innovation Competitive Intelligence Tools

- Used by companies world wide to improve their competitive position
 - Airbus, GE, Samsung, Siemens, etc.
- Wide variety of Analytical Tools to:
 - Model Problems
 - Model Solutions
- Gives specific solution paths towards improving your competitive position
- The following is intended to familiarize you with the principles underlying the strategies I will discuss during the panel discussion

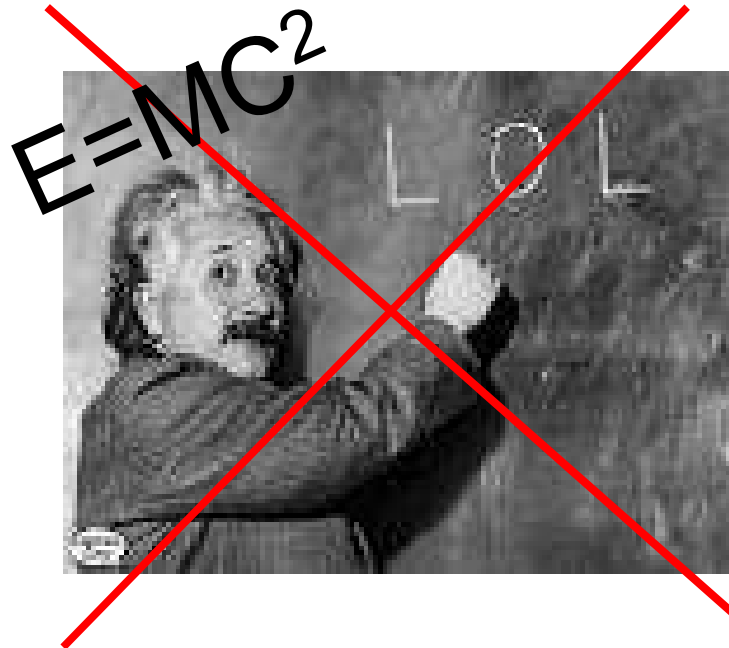
Systematic Innovation

- Prevailing thought is that innovation only comes from a gifted few or that it simply happens randomly and by luck.



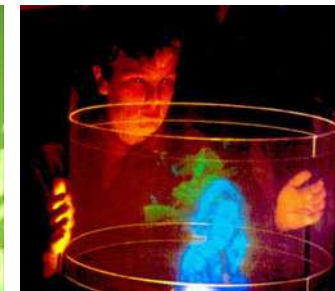
Systematic Innovation

- In fact, innovation can now be systematic and purposeful.



Systematic Innovation

- In fact, innovation can now be systematic and purposeful.



The Theory of Inventive Problem Solving (TRIZ)

- 3 TRIZ Tools for competitive intelligence
 - Functional Analysis
 - Trends of System Evolution (TSE)
 - Patent Analysis and Circumvention

Functional Analysis

- The function of a system is the reason for it's existence.
- What is the system doing?

Component: book



function: inform

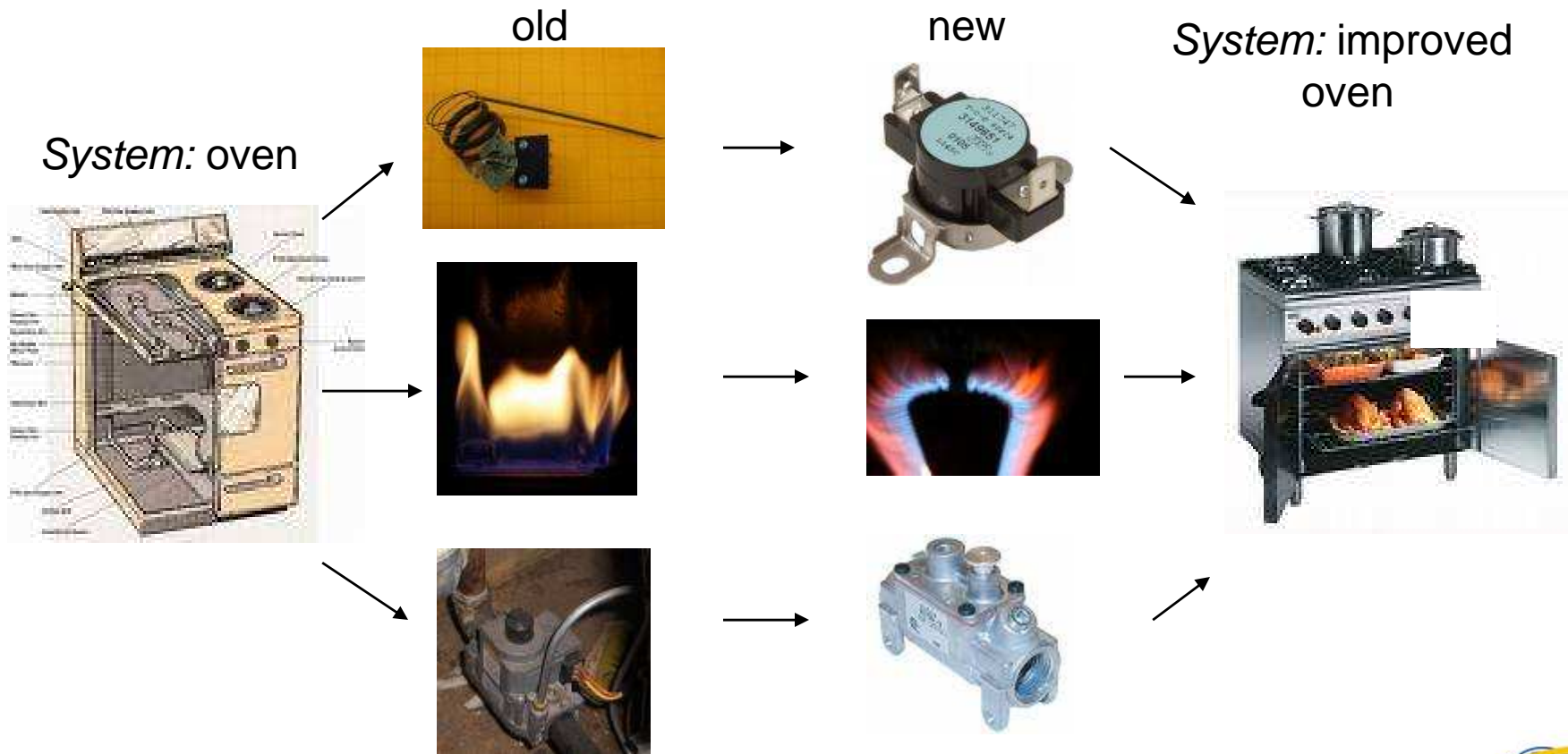


function: press

Functional Analysis

- **Component** Analysis results in system **evolution**

Components: thermostat, burner, gas valve

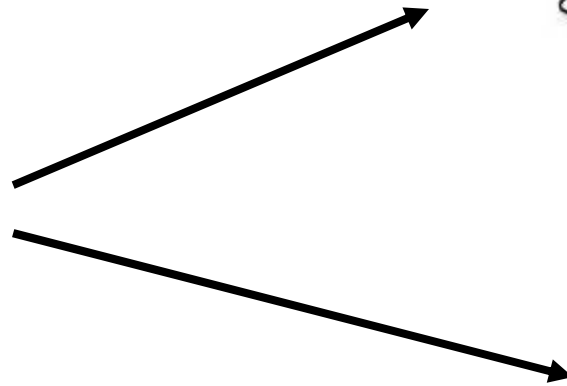


Functional Analysis

- **Function** analysis results in system **innovation**

System: cup heater, solar oven

System: oven



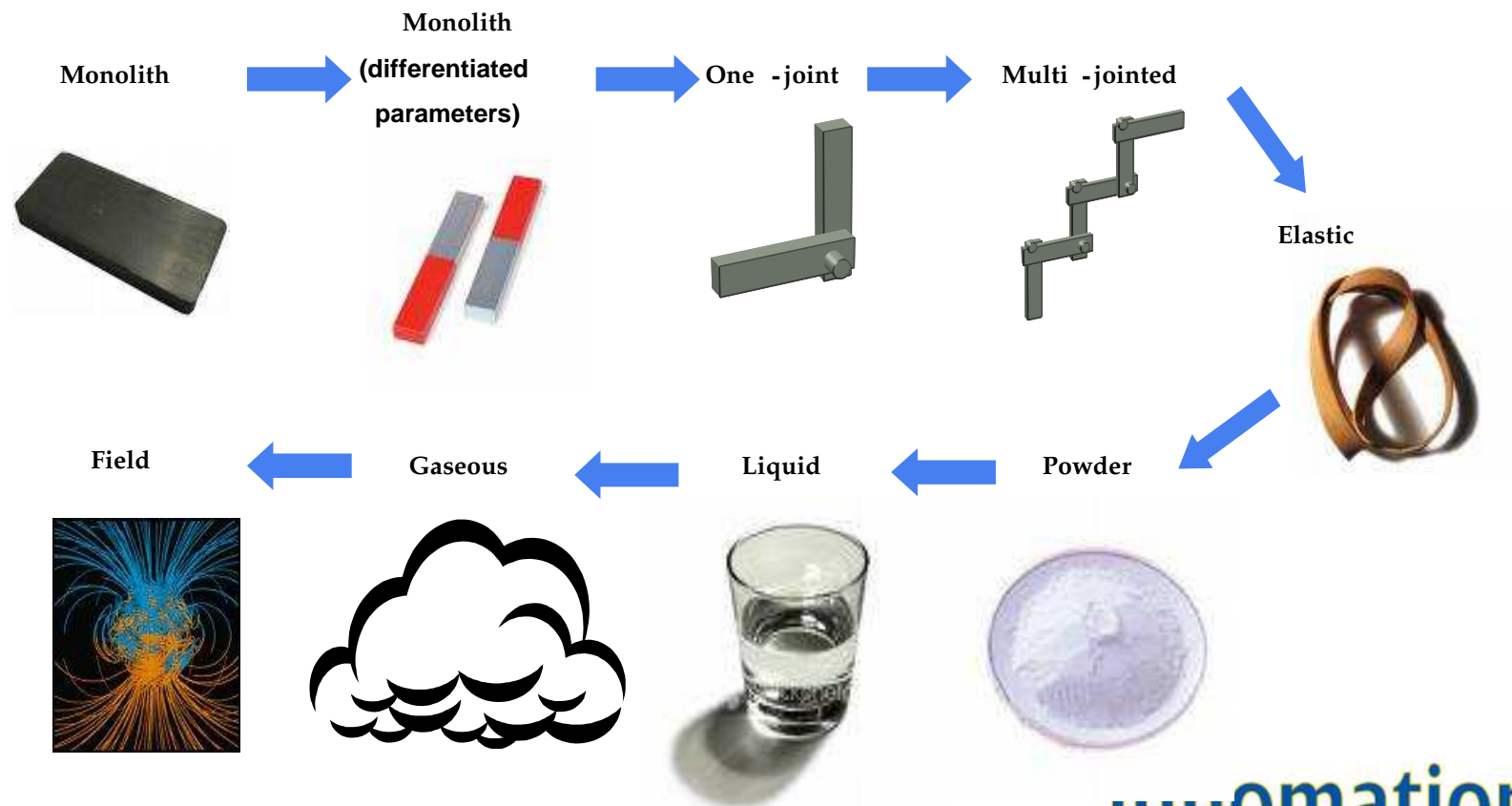
function: heats food



System: microwave, solar heating bag

Trends of System Evolution (TSE)

- Trend of Increasing Dynamization (1 of 11 interrelated trends)



Trends of System Evolution (TSE)

- Trend of Increasing Dynamization (1 of 11 interrelated trends)

rigid

single joint

multi-joint

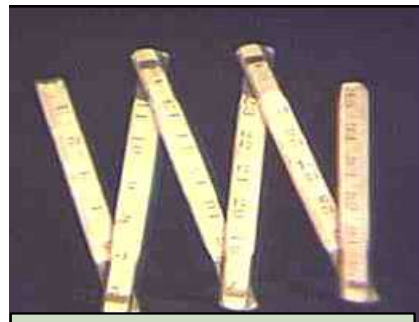
elastic

liquid or gas

field



Simple Ruler



Folding Ruler



Measuring Tape



Laser Ruler

Patent Analysis and Circumvention

Patent Criteria:

1.) Novelty – new, does not exist, must be novel word wide

- Patents focus on Components not Functionality.
- To make a patent novel:
 - Change the Components and retain its Functionality
 - Insure the patent is *Non-Equivalent*

Patent Analysis and Circumvention

Patent Criteria:

1.) Novelty – new, does not exist, must be novel word wide

- Patents focus on Components not Functionality.

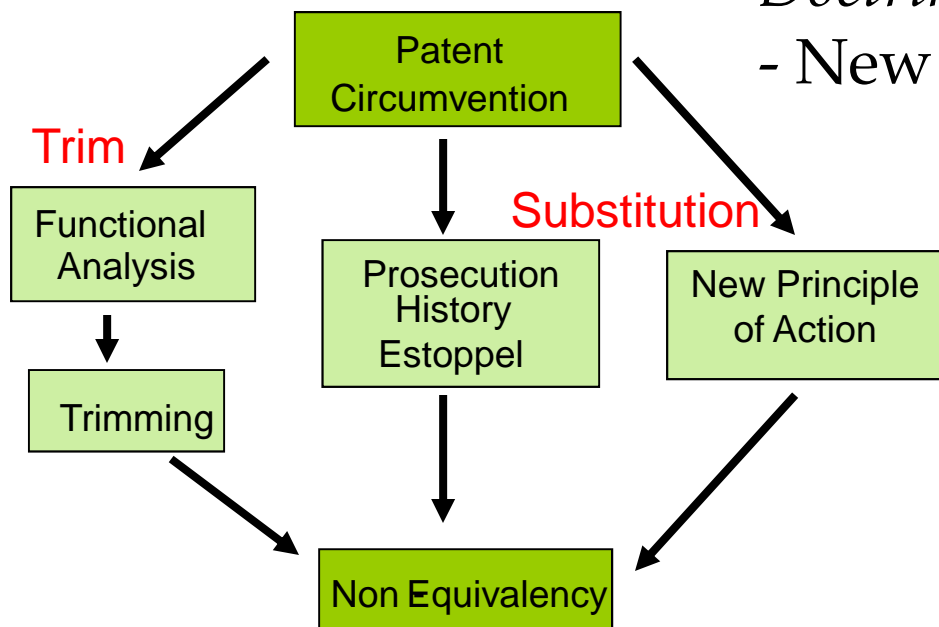
- To make a patent novel:

- Change the Components and retain its Functionality

- Insure the patent is *Non-Equivalent*

Patent Analysis and Circumvention

- To make a patent novel:
 - Change the Components and retain its Functionality
 - Trim
 - Substitute
 - Prosecution History Estoppel can avoid Doctrine of Equivalence
 - New Principle of Operation (Action)



This information may not be reproduced without the written consent of Innomation, LLC

Patent Circumvention Example

Trimming

- 2007 TomTom Patent - GPS with built in video camera



Patent Circumvention Example

Trimming

- 2007 TomTom Patent - GPS with built in video camera



1.) Trim a component

Patent Circumvention Example

Trimming

- 2007 TomTom Patent - GPS with built in video camera

Component: GPS



+

Video GPS



=

Function: information

live images

graphics overlay on live image

- 1.) Trim a component
- 2.) Replace the functionality

Patent Circumvention Example

Trimming

- 2007 TomTom Patent - GPS with built in video camera

Component:

GPS



Windshield w/
plasma tech.



+ =

Function:

information

live images

graphics overlay on live image

- 1.) Trim a component
- 2.) Replace the functionality

Patent Circumvention Example

Trimming

- 2007 TomTom Patent - GPS with built in video camera

Component:

GPS



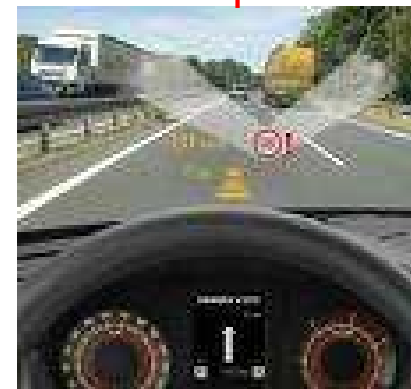
+

Windshield w/
plasma tech.



=

Heads-up GPS



Function:

information

live images

graphics overlay on live image

- 1.) Trim a component
- 2.) Replace the functionality

Patent Circumvention Example

New Principle of Action



Component: Sewing Machine

Function: Join *material*

Current Action Principle

Thread Stitching



Patent Circumvention Example

New Principle of Action



Component: Sewing Machine

Function: Join *material*

Current Action Principle

Thread Stitching



New Action Principle

Micro Rivets



Contact Information

David W. Conley

Innomation, LLC

David@InnomationLLC.com

PO Box 30807

Albuquerque, New Mexico, USA

87190

505-206-3401

InnomationLLC.com

