



Creative Problem Solving

(for Oracle systems)

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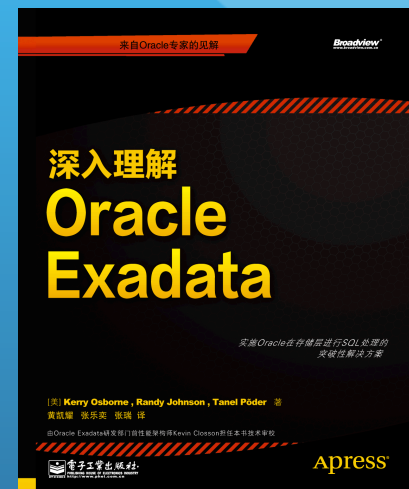
The logo for enkitec features a stylized white wave or leaf-like graphic above the word "enkitec" in a white, lowercase, serif font.

whoami -

Never Worked for Oracle
Worked with Oracle Since 1982 (V2)
Working with Exadata since early 2010
Work for Enkitec (www.enkitec.com)
(Enkitec owns a Half Rack Exadata – V2/X2)
(Enkitec owns a Big Data Appliance)
Many Exadata customers and POCs
Exadata Book (recently translated to Chinese)
Hadoop Aficionado

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whoami - really

Extremely Analytical
Also Creative
Pragmatic
Optimistic
Serial Entrepreneur
Interviewed 1000's of People
Love Working with People
Hate Working with People
I Think for a Living
I've Spent a Lot of Time Thinking About Thinking



Blog: kerryosborne.oracle-guy.com

Twitter: @KerryOracleGuy



ORACLE
ACE Director

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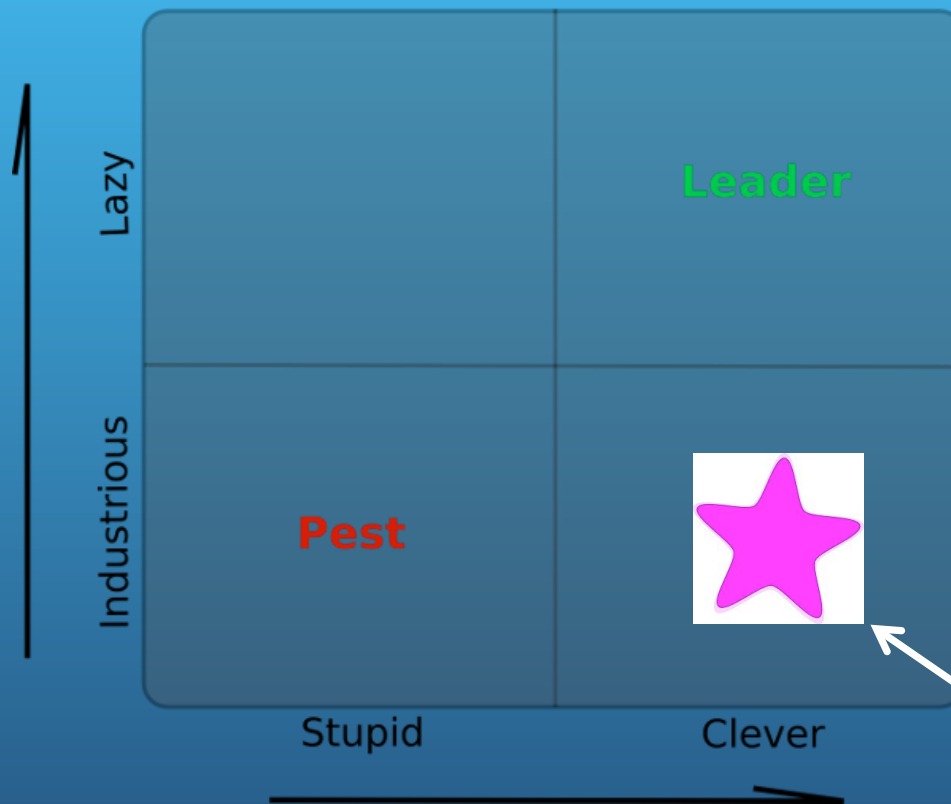
What makes a good problem solver?

Smart
Hard Worker
Technical Background
Communication Skills



- All important, but none guarantee success

Smart and Hard Worker



"I divide my officers into four classes; the clever, the lazy, the industrious, and the stupid. Each officer possesses at least two of these qualities. Those who are clever and industrious are fitted for the highest staff appointments. Use can be made of those who are stupid and lazy. The man who is clever and lazy however is for the very highest command; he has the temperament and nerves to deal with all situations. But whoever is stupid and industrious is a menace and must be removed immediately!"

Best Problem Solvers

Technical Background

It Takes Years to Acquire

The Harder You Work the Faster You Progress

Fundamentals are Important

Diversified Background is Extremely Helpful

Digression - Learning

Most Effective When Feedback is Quick
Breaking Things (in Test) is a Great Tool
Jonathan Lewis - “How to Become an Expert”
- Only talked about how to create test cases

Communication Skills



Two Modes of Thought



Intuitive

System 1

Automatic

$$1 + 1 = 2$$

Analytical

System 2

Requires Effort

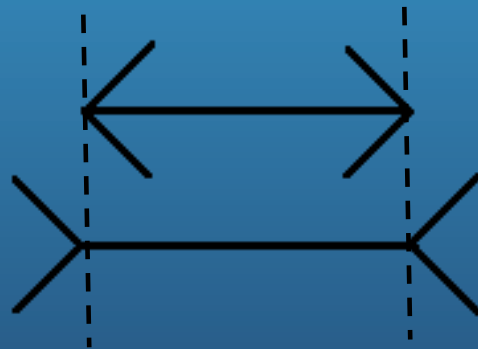
Lazy

$$17 \times 35 = 595$$

System 1 - Intuition

Right Most of the Time
In Control Most of the Time
Biases

Lazy – Substitution, WYSIATI
You Can't Really Turn It Off
- Müller-Lyer Illusion



Problem Characteristics

Complex

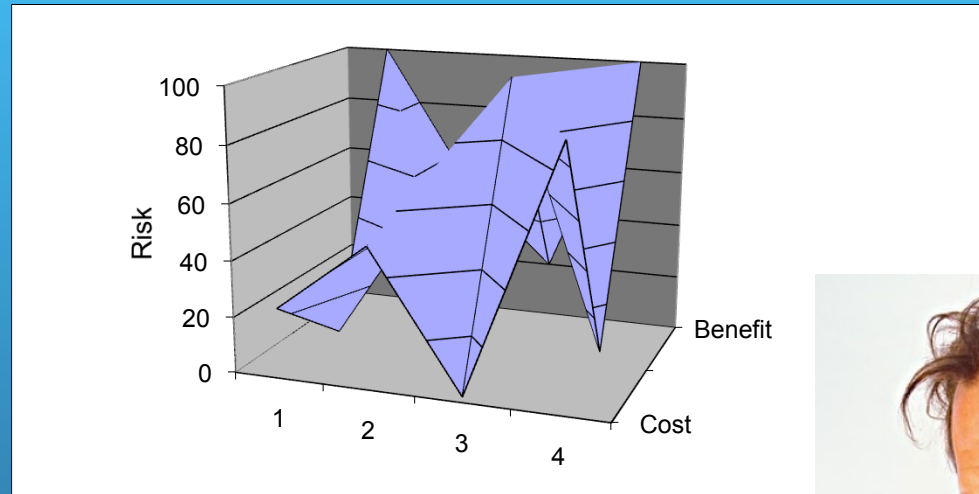
Multiple Solutions

Solutions Vary

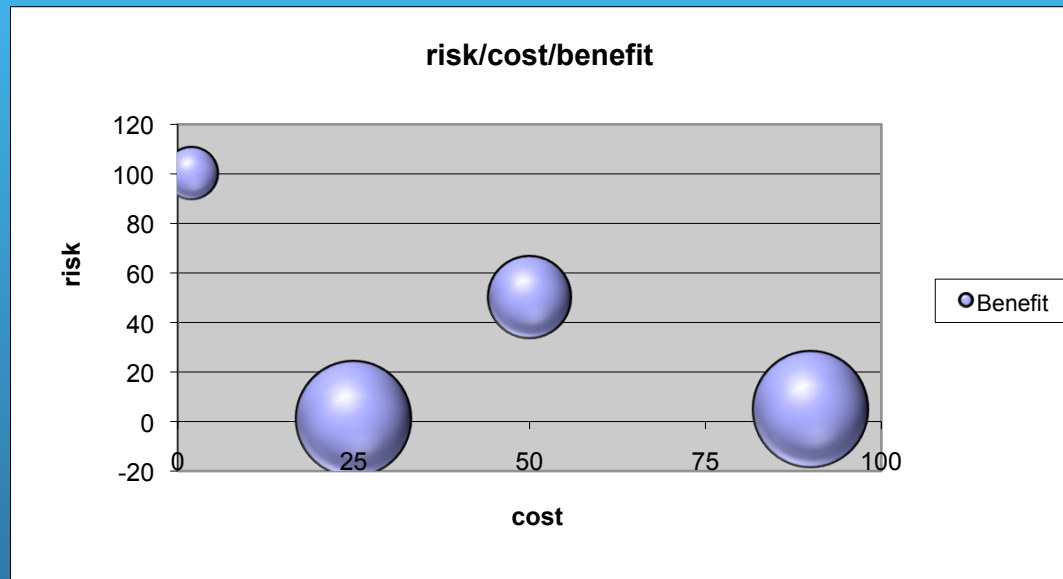
- Benefit
- Cost
 - Time to Implement
- Risk

$$\begin{aligned}a &= b \\ a^2 &= ab \\ a^2 + a^2 &= a^2 + ab \\ 2a^2 &= a^2 + ab \\ 2a^2 - 2ab &= a^2 + ab - 2ab \\ 2a^2 - 2ab &= a^2 - ab \\ 2(a^2 - ab) &= 1(a^2 - ab) \\ 2 &= 1\end{aligned}$$

Visualization



Visualization



Basic Problem Solving Steps

1. Defining the Problem
2. Gathering Data
3. Postulating a Reason for the Problem
4. Listing Possible Solutions
5. Ordering the Possible Solutions
6. Attempting the Possible Solutions

Two Basic Approaches

Intuitive & Methodical

- Both use the same basic steps
- Vary in time spent on steps
- Vary in order of steps
- Vary in practitioners view of steps

Hallmarks - Methodical Approach

Mental Discipline to postpone Step 3

Doggedly pursues options in defined order

Rarely changes order of options

Hallmarks - Intuitive Approach

Jumps to Step 3 almost immediately

Often Misses Important Data

Often Less Creative in Step 4

Willingness to Quickly Abandon an Option

Flexibility to Re-order Options

3rd Option - Combined Approach

Jumps Quickly to Step 3

Willingness to Quickly Abandon an Option

Flexibility to Re-order Options

Falls Back to Methodical if Intuitive Doesn't Work

* Recognition-Primed Decision making model (RPD)



Results (my opinion)

Combined (RPD) Usually Delivers Best Results

- for very experienced people

Methodical Approach Better Than Intuitive

More Creative Solutions

Generally in Less Time

Intuitive Approach Alone Not Good

But Occasionally Can Be Fastest

- for very experienced people
- or if you're lucky

Improving Your Odds

Draw a Picture

Say it Out Loud

Use Analogies

- Momma Says

Change the Problem

Question the Necessity

Look for Commonalities in Proposed Solutions

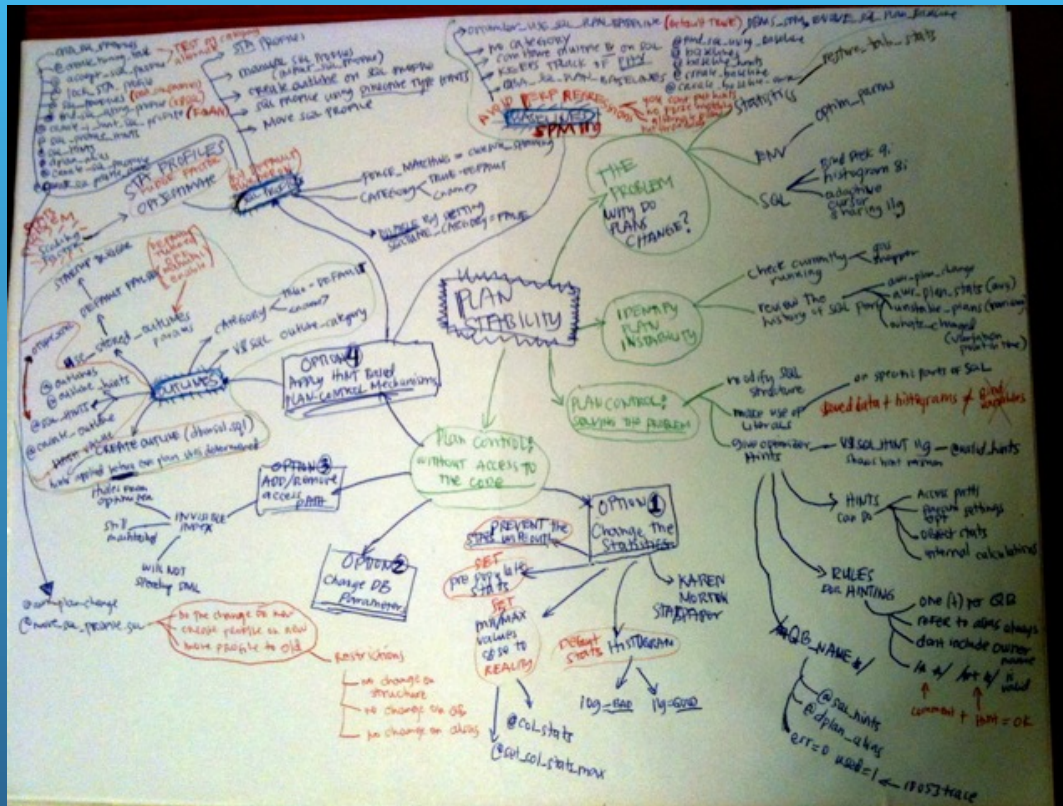
– eliminate them

Ask Why

Take a Break



Draw a Picture (Karl's Mind Map)



Take a Break

Some Problems Require Focus
Other Problems Require Insight

Distracting Yourself is a Valid Technique

Intuitive Side Works Better When Not Distracted

- by the Effortful Side

Ever Notice How Your Best Ideas Show Up In The Shower?

Even Very Short Breaks Can Help



Take a Break - Example



Noel



MATTER

Mind Over Matter

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Improving Your Odds

Longer Term Suggestions

Collaborate

Question the Conventional Wisdom

Embrace the Ambiguity

Relax



Effects of Stress

Stories of poor performance under stress are numerous
Physiological – Adrenaline, Cortisol

Choking

Bribing



Avoiding Stress

What's The Worst That Can Happen?
That Which Doesn't Kill You
- Makes You Stronger

Negative Personality Traits

Keep Us from Being Effective

Ingrained Patterns of Thinking
Common
Easy to Spot

The “I’ve got a hammer and everything looks like a nail” Syndrome

Characteristic:

- Using the wrong tool for the job

Example:

- SQL*Net Wait Event



“If you drop your keys in the sewer, you’re not going to find them in the flower pot.” ~ Cary Millsap

Spy vs. Spy

Characteristic:

- Sneaky / Secretive

Example:

- Too many to count



Sunlight is said to be the best of disinfectants. ~
Supreme Court Justice Louis Brandeis

Can't See the Forest for the Trees

Characteristic:

- Too focused on details

Example:

- 1999 Harvard Study



Houdini

Characteristic:

- Blinded by assumptions

Example:

- Escape from Cell



Stressed Out Sam

Characteristic:

- One big twitch

Example:

- dd



Stress Reduction Kit



Directions:

1. Place kit on FIRM surface.
2. Follow directions in circle of kit.
3. Repeat step 2 as necessary, or until unconscious.
4. If unconscious, cease stress reduction activity.

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The Ostrich

Characteristic:

- Head in the sand

Example:



The Ghost and Mr. Chicken

Characteristic:

- Afraid of own shadow

Example:

- Green Bag



The Teenage Brain

Characteristic:

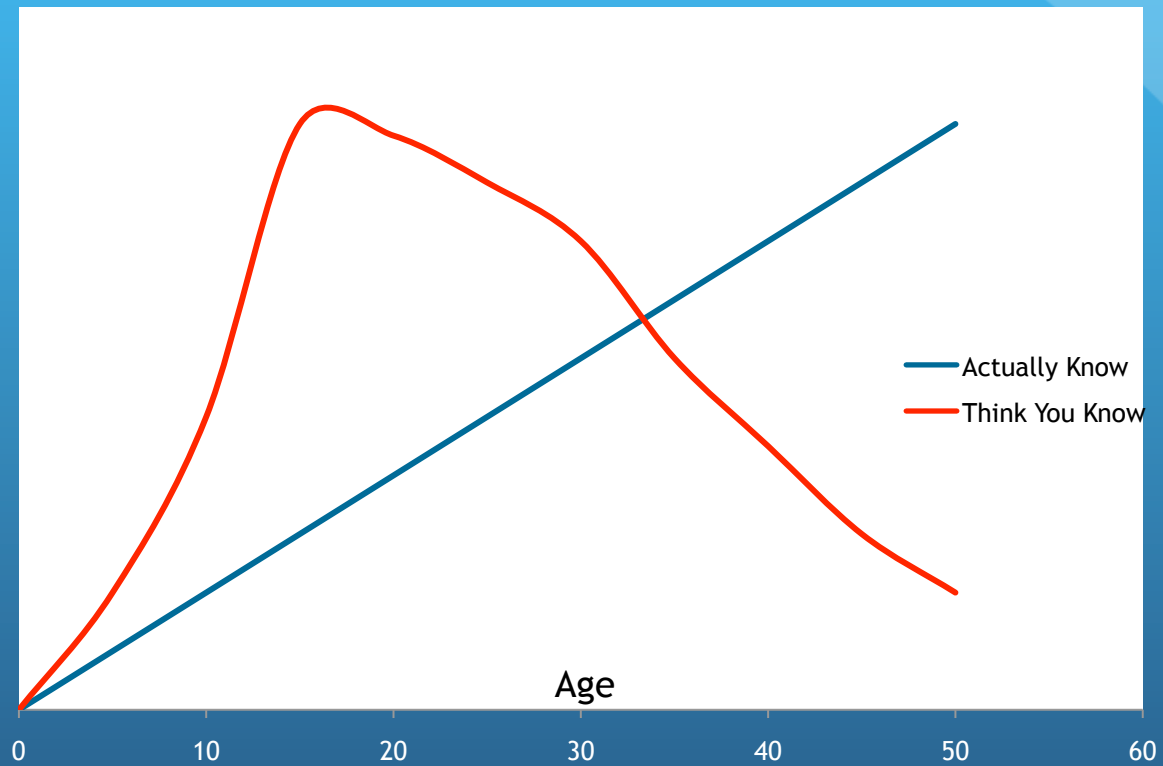
- Thinks he's immortal

Example:

- Working without a net



More Self Aware Starting at 18



The Story Teller

Characteristic:

- Too Quick to Connect the Dots

Example:

- Athletic Shoe Statistics



The Urban Legend Crusader

Characteristic:

- Believes unsubstantiated rumors

Example:

- Lipstick -
w/ cancer-causing lead



The Monk

Characteristic:

- Extreme Compulsiveness

Example:

- Shaving 10ms off 3hr batch job



So you remember how many jelly beans you saw? ~ Sharona

It's a blessing, ... and a curse. ~ Adrian

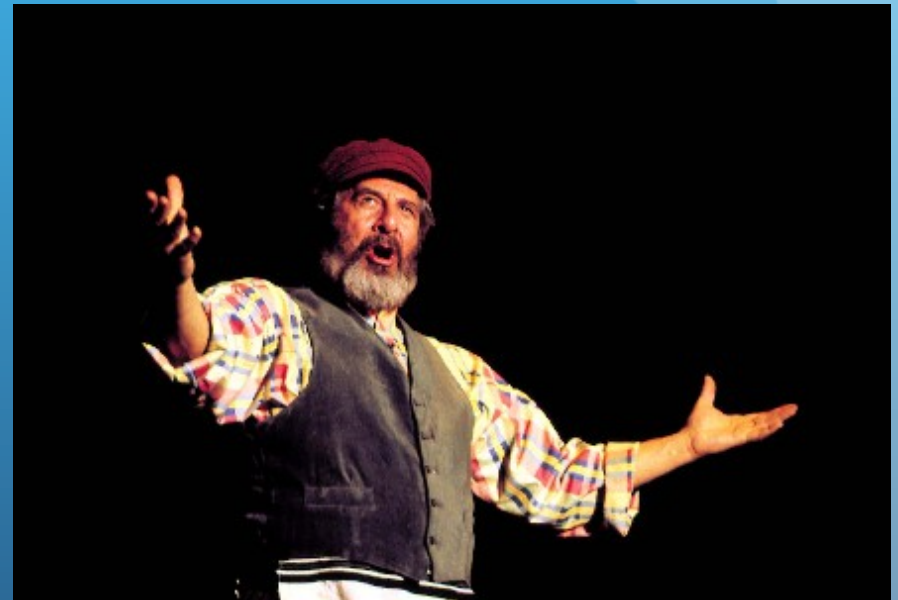
Fiddler on the Roof

Characteristic:

- Loves Tradition

Example:

- 5 monkeys



Wrap Up

Problem solving is part science, part art

I think we can improve on our natural abilities

- By being aware of the process

- By being aware of our negative tendencies

- By developing the right attitudes

- By watching others

- By practicing

- By being curious

References

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Questions?

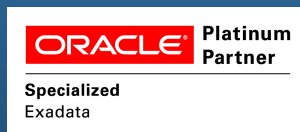
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Fastest Growing Companies
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