



Creative Problem Solving

(for Oracle systems)

Presented by: Kerry Osborne

ECO October 2014

The logo for enkitec, featuring a stylized white wave or swoosh above the word "enkitec" in a lowercase, serif font.

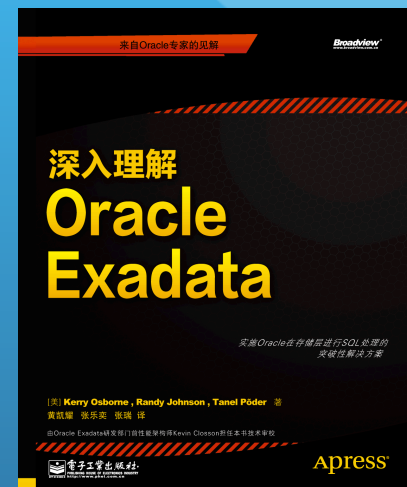
whoami -

Never Worked for Oracle
Working with Oracle Since 1982 (V2)
Work for Enkitech (www.enkitech.com)
- now part of Accenture
Working with Exadata since early 2010
Hadoop Aficionado

Blog: kerryosborne.oracle-guy.com
Twitter: @KerryOracleGuy



ORACLE®
ACE Director



enkitech

whoami - really

Extremely Analytical

Also Creative

Pragmatic

Optimistic

Interviewed 1000's of People

Love Working with People

Hate Working with People

Solved Problems for a Living

I've Spent a Lot of Time Thinking About Thinking



What makes a good problem solver?

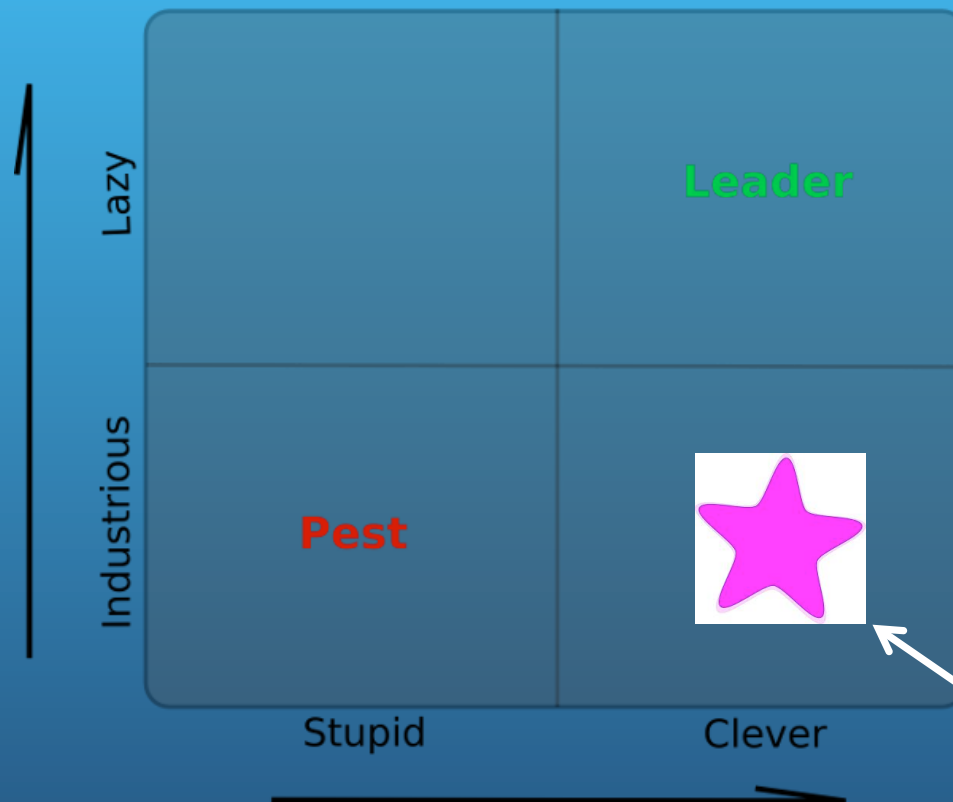
Smart
Hard Worker
Technical Background
Communication Skills



-All important, but none guarantee success

Relaxed
Optimistic
Experienced Failure

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
Learning How to Learn is an Important Part
The Harder You Work the Faster You Progress
Fundamentals are Important
Diversified Background is Extremely Helpful

Digression - How We Learn

Most Effective When Feedback is Quick

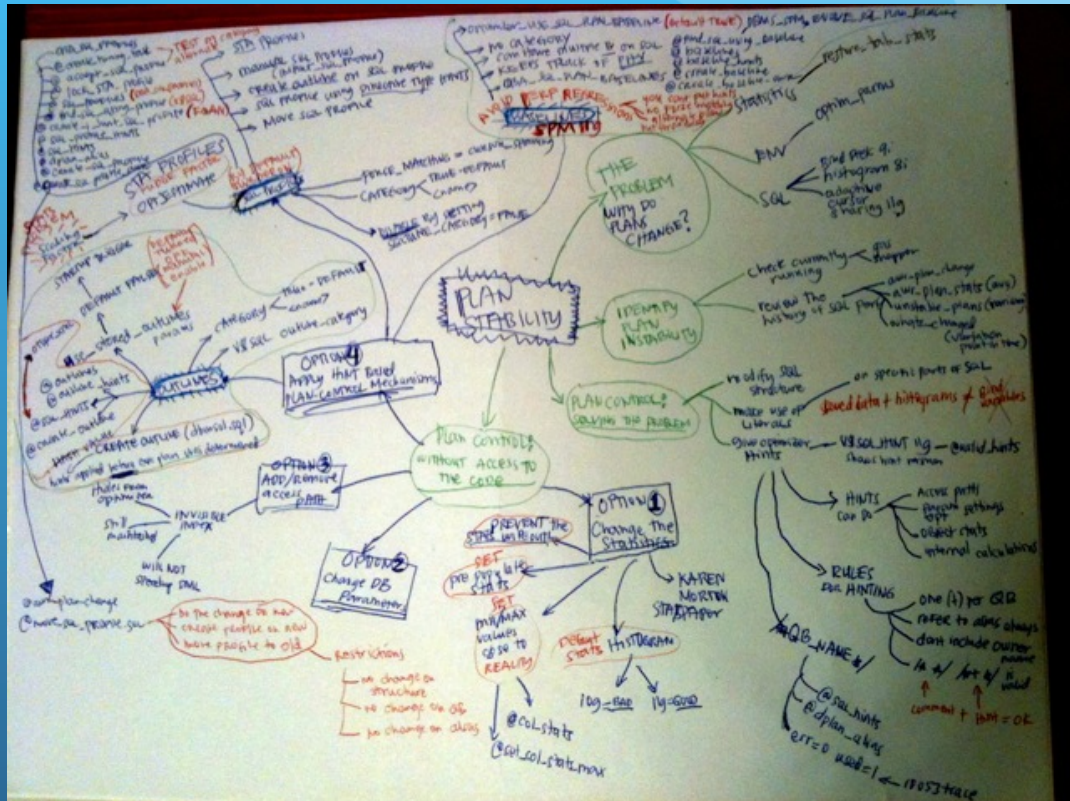
- Learning to drive a car is easier than learning to drive a big boat

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

Doesn't matter if you're the smartest guy in the room if you can't convince other people.



Two Modes of Thought

Intuitive

System 1

Automatic

$$1 + 1 = 2$$

Analytical

System 2

Requires Effort*

$$19 \times 35 = 665$$

*our brains are naturally lazy

System 1 - Intuition

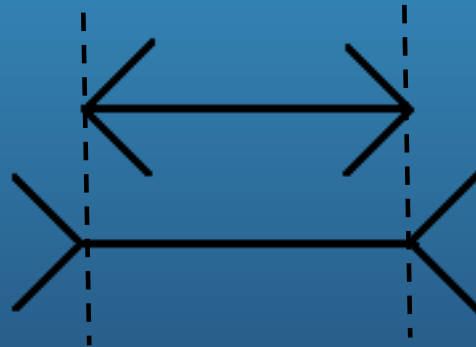
Correct Most of the Time
In Control Most of the Time

Biases

Lazy – Substitution, WYSIATI

You Can't Really Turn It Off

- Müller-Lyer Illusion



Problem Characteristics (for us)

Complex

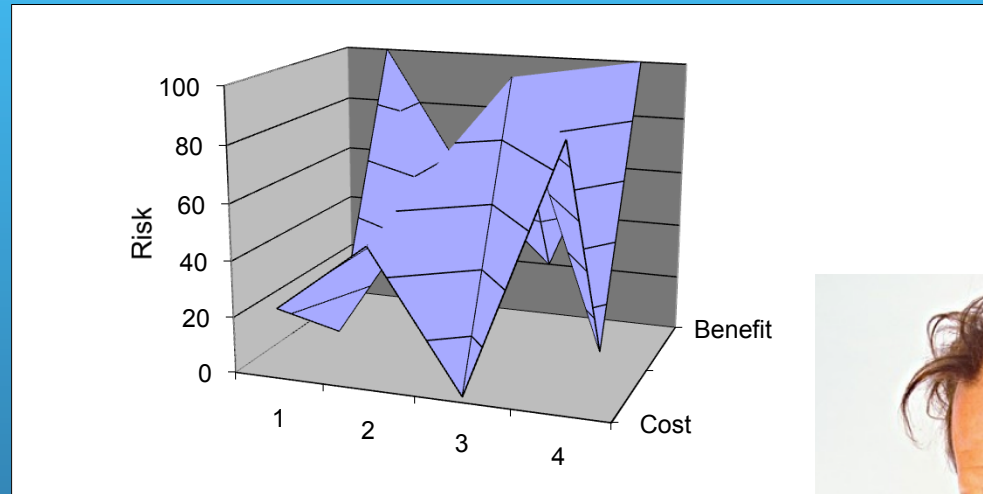
Multiple Solutions

Solutions Vary

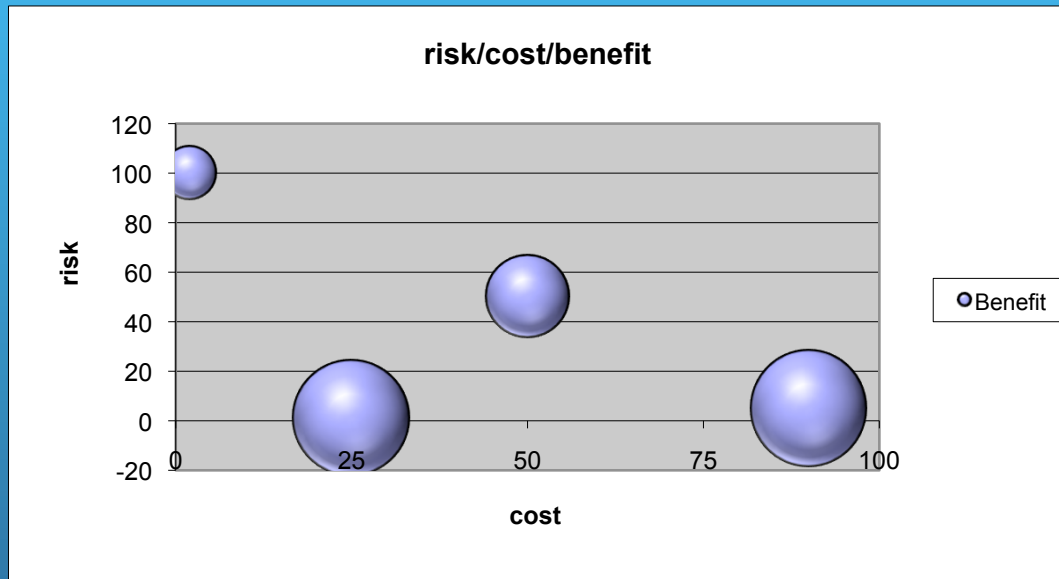
- Benefit
- Cost
 - Monetary
 - Time to Implement
- Risk

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

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 - Intuitive Approach

Jumps to Theorizing (Step 3) Almost Immediately

Often Misses Important Data (Step 2)

Often Less Creative in Possible Solutions (Step 4)

Willingness to Quickly Abandon an Option

Flexibility to Re-order Options

Hallmarks - Methodical Approach

Mental Discipline to Postpone Theorizing (Step 3)

Problem More Well Defined (Step 1)

More Data Available (Step 2)

More Creative Solutions are Possible

Potential Downsides:
Reduced Flexibility
Takes More Time

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)

* Also known affectionately as the Tanel Method TM



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 (overall)
Generates More Confidence

Intuitive Approach Alone Not Good
But Occasionally Can Be Fastest
- for very experienced people
- or if you're lucky



Can We Get Better?

Yes We Can!

1. Techniques (tricks) to Improve Your Odds
2. Negative Personal Factors

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

enkitec

Improving Your Odds

Longer Term Suggestions

Collaborate

Question the Conventional Wisdom

Embrace the Ambiguity

Relax

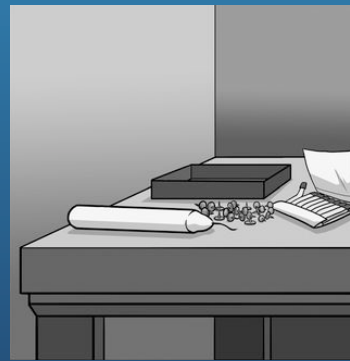
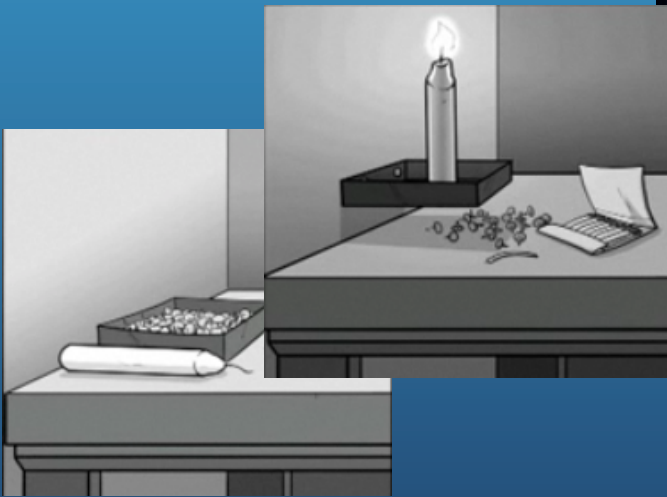


Effects of Stress

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

Choking

Bribing



enkitec

Avoiding Stress

What's The Worst That Can Happen?

Tim – “I hope they ask me something I know, I hope they ask me something I know, ...”

That Which Doesn't Kill You

- Makes You Stronger

Final Thought: Preparation is the key to reducing stress

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
 - Can be just plain laziness
 - More often repetitive thinking
 - Silk, silk, silk

Example:

- Informatica - 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



Whether or not you can observe a thing depends upon the theory you use. It is the theory which decides what can be observed. ~ Albert Einstein

Stressed Out Sam

Characteristic:

- One big twitch

Example:

- dd



Stress Reduction Kit

**Bang
Head
Here**

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.

AHAJOKES.COM

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

The Ostrich

Characteristic:

- Head in the sand

Example:

- Bounce the Database



The Ghost and Mr. Chicken

Characteristic:

- Afraid of own shadow

Example:

- Green Bag



Most of our fear is groundless by the way, fear of the unknown. Education, curiosity and work ethic will resolve most of that. Testing will resolve the rest. ~ I said that

The Teenage Brain

Characteristic:

- Thinks he's immortal

Example:

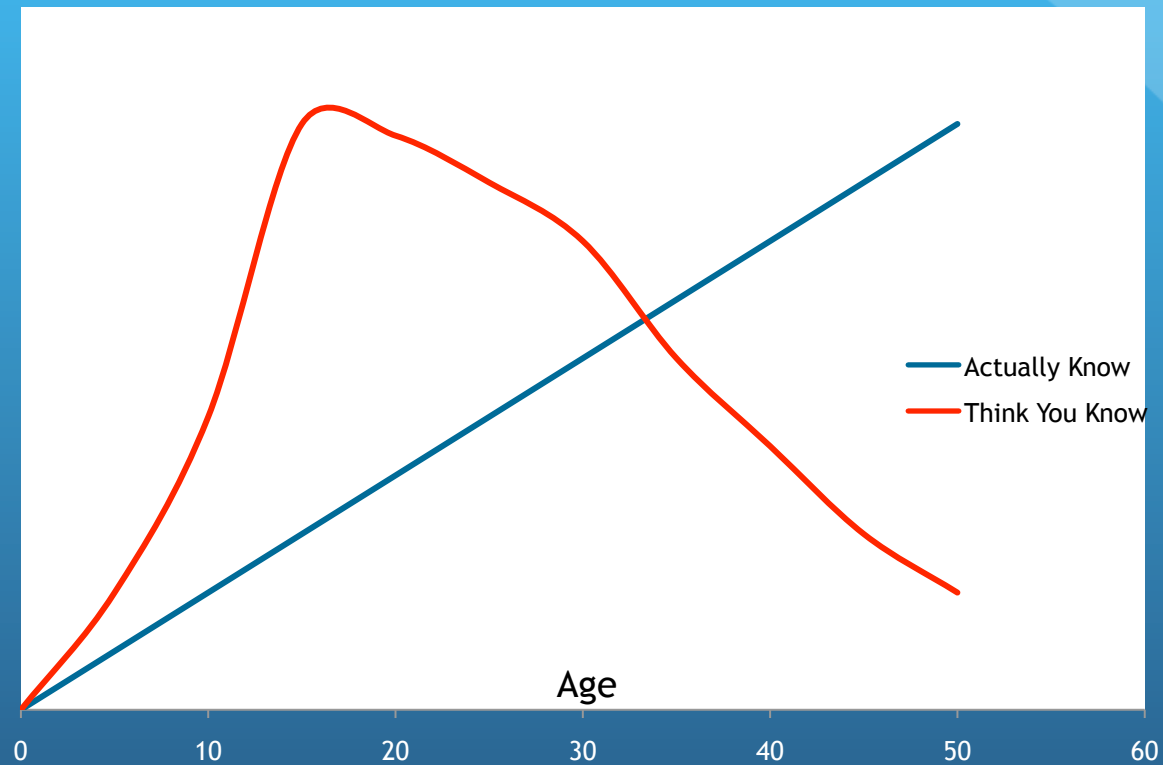
- Working without a net



A man's gotta know his limitations. ~ Dirty Harry (Clint Eastwood)

enkitec

More Self Aware Starting at 18



The Story Teller

Characteristic:

- Too Quick to Connect the Dots

Example:

- Athletic Shoe Statistics



Did ya hear? They took the word gullible out of the dictionary!

enkitec

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

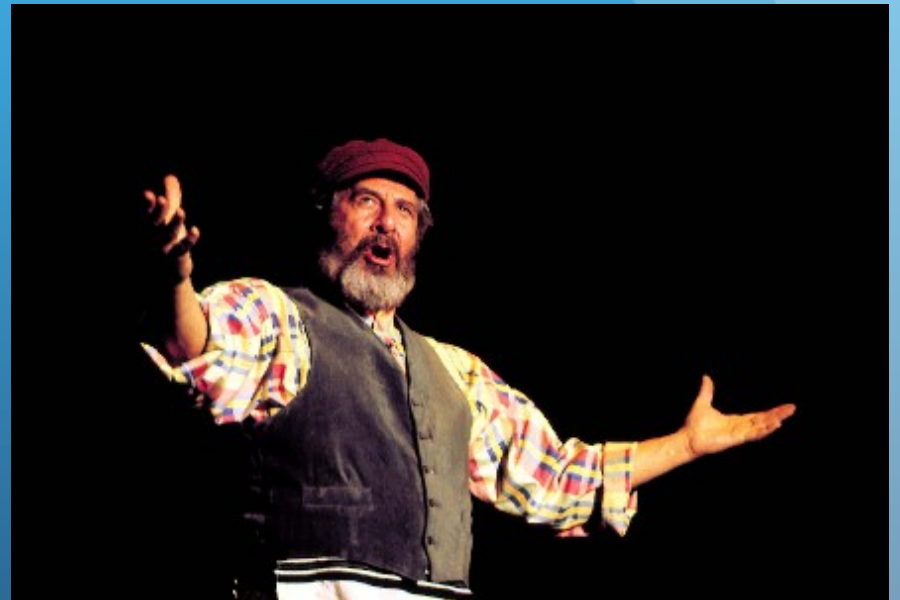
Fiddler on the Roof

Characteristic:

- Loves Tradition

Example:

- 5 monkeys



Aeronautical Decision Making (ADM)

FAA's Risk Management Handbook

Steps for good decision-making are:

1. Identifying personal attitudes hazardous to safe flight.
2. Learning behavior modification techniques.
3. Learning how to recognize and cope with stress.
4. Developing risk assessment skills.
5. Using all resources.
6. Evaluating the effectiveness of one's ADM skills.

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

Thinking, Fast and Slow – Farrar, Straus and Giroux, 2011, Daniel Kahneman

Optimizing Oracle Performance - O'Reilly & Associates, 2003, Cary Millsap, Jeff Holt

Sources of Power: How People Make Decisions – The MIT Press, 1998, Gary Klein

Blink - Time Warner Book Group, 2005, Malcom Gladwell

Imagine: How Creativity Works – Houghton Mifflin Harcourt, 2012, Jonah Lehrer

Did You Spot the Gorilla? - Random House New Zealand ,2004, Richard Wiseman

Creative Problem Solving: A Step-by-Step Approach - Pyczak Publishing, 2002,
Robert A. Harris

Drive: The Surprising Truth About What Motivates Us – Riverhead Trade, 2011,
Daniel H. Pink

The Psychology of Computer Programmers – Dorset House Publishing, 1971, Gerald
Weinberg





Questions?

Contact Information : Kerry Osborne

[Email: kerry.osborne@enkitec.com](mailto:kerry.osborne@enkitec.com)

[Blog: Kerryosborne.oracle-guy.com](http://Kerryosborne.oracle-guy.com)

[Twitter: @KerryOracleGuy](https://twitter.com/KerryOracleGuy)

www.enkitec.com