

# The Seeds of Innovation

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# AIRSELECT™



# Innovation

- An innovation is something original, new, and important—in whatever field—that obtains a foothold in a market or society (Wikipedia)
- Key concern for most companies
- Differentiation, increasing revenue, increasing margins





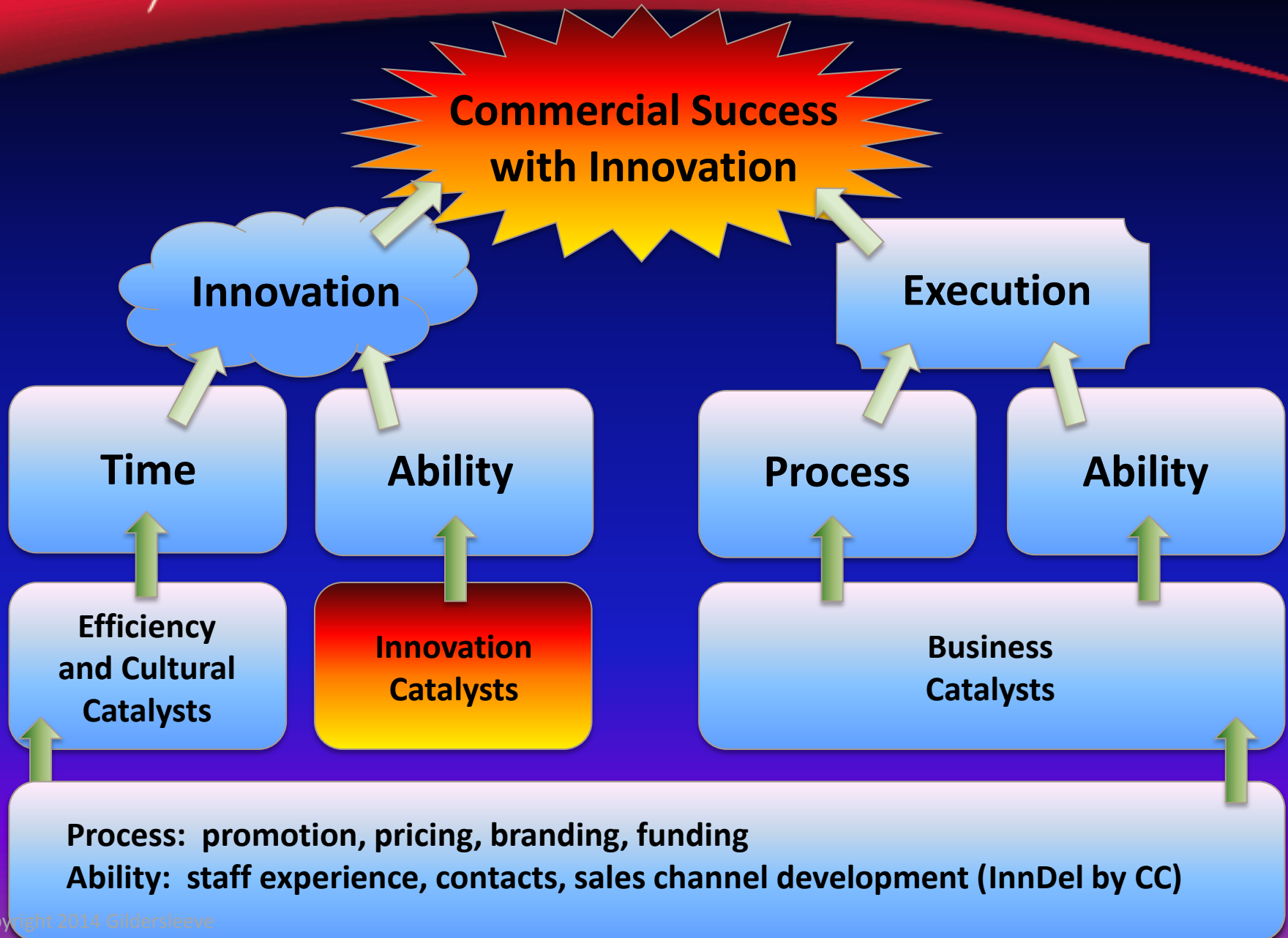
# Innovation

From the invention of the wheel to the Roman chariot, automobile, airplane and more recently to space vehicles, humanity has made continued and amazing technological advances.



- Innovation is universally desired
- Innovation is not new
- Why then the ongoing innovation struggle?
- What does it take to be a successful innovator?





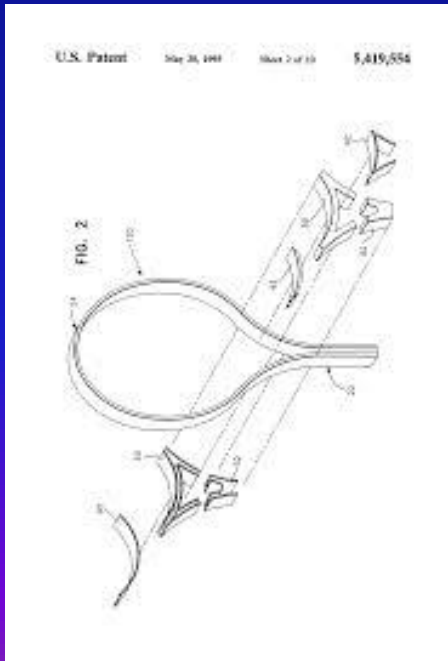
# Where does innovation begin?



- It usually does not begin with any contemporary lean product development philosophies or tools
- It usually does not begin with talking with customers
- What inspired you? What led you to thinking of a specific new way to solve your problem? What, exactly, allowed you to come up with your new idea?

# Adjacency Immersion

- Technologies, materials, design, processes, fields
- Example: Composite knee brace





# Adjacency Immersion

- Example: computer mouse



# Types of Active Observation



- Things: field trips, retail, trade shows, vendors, search engines, nature, conferences



- Work processes: ethnography, mentors, OJT, trades, machinery, role play

## Skill Depth

- Easing the path to creativity, increasing your knowledge, your expertise, your access to relevant information
  - Science and engineering
  - Trade apprenticeship
  - Industrial design
  - Model making



# Building

- Thinking with your hands
  - Sketching
  - Cutting, taping and gluing
  - Tool/material carts, shops
  - Modeling
  - 3D printing



WHEN WAS THE LAST TIME  
YOU DID SOMETHING  
FOR THE FIRST TIME?



Testing leads to failure, and failure leads to understanding.

*Burt Rutan*



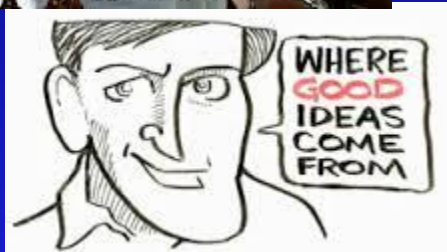


# Observation, Immersion and Preparation



“Chance favours the prepared mind. The more you practice, the luckier you become.”

Chance favors the prepared mind, Louis Pasteur



“connected”, Steven Johnson



The harder I work, the luckier I get, Coleman Cox

“practice”, Gary Player

# Creativity and Artistry

- Imagining
- Combining in new ways
- Playfulness
- Flexibility, openness
- Considering
- Improving



"Creativity is more than just being different. Anybody can plan weird; that's easy. What's hard is to be as simple as Bach. Making the simple, awesomely simple, that's creativity"

- Charles Mingus

TwistedSifter.com

Creativity is just connecting things.  
When you ask creative people how they did something,  
they feel a little guilty because they didn't really do it;  
they just saw something. It seemed obvious  
to them after a while.

**STEVE JOBS**



# ProtoStorming: Accelerating the concept development phase

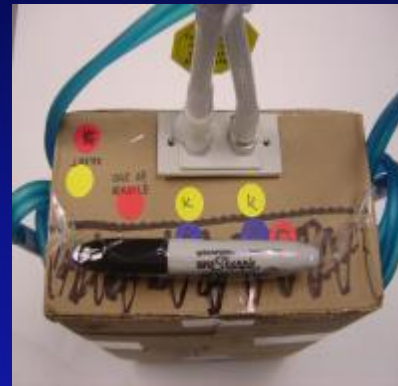
- Playfulness, building, creativity, combining
- Brainstorming combined with rapid prototyping, Kaizen-like
- Small, passionate teams
- Many ideas investigated in a short time period
- Reduced dependence on design specs





# Customerstorming

- Venaflow Elite for DVT/PE prevention
- Role play, play, creativity



# Invention Day

- Goal: Allocate time to explore new ideas, solve tangential problems, generate future revenue streams
- Frequency: Full day, recurring once every month
- Method:
  - Idea preview at start of day for input and collaboration
  - Report-out at end of day for traction
  - Posted on visual “future products” board



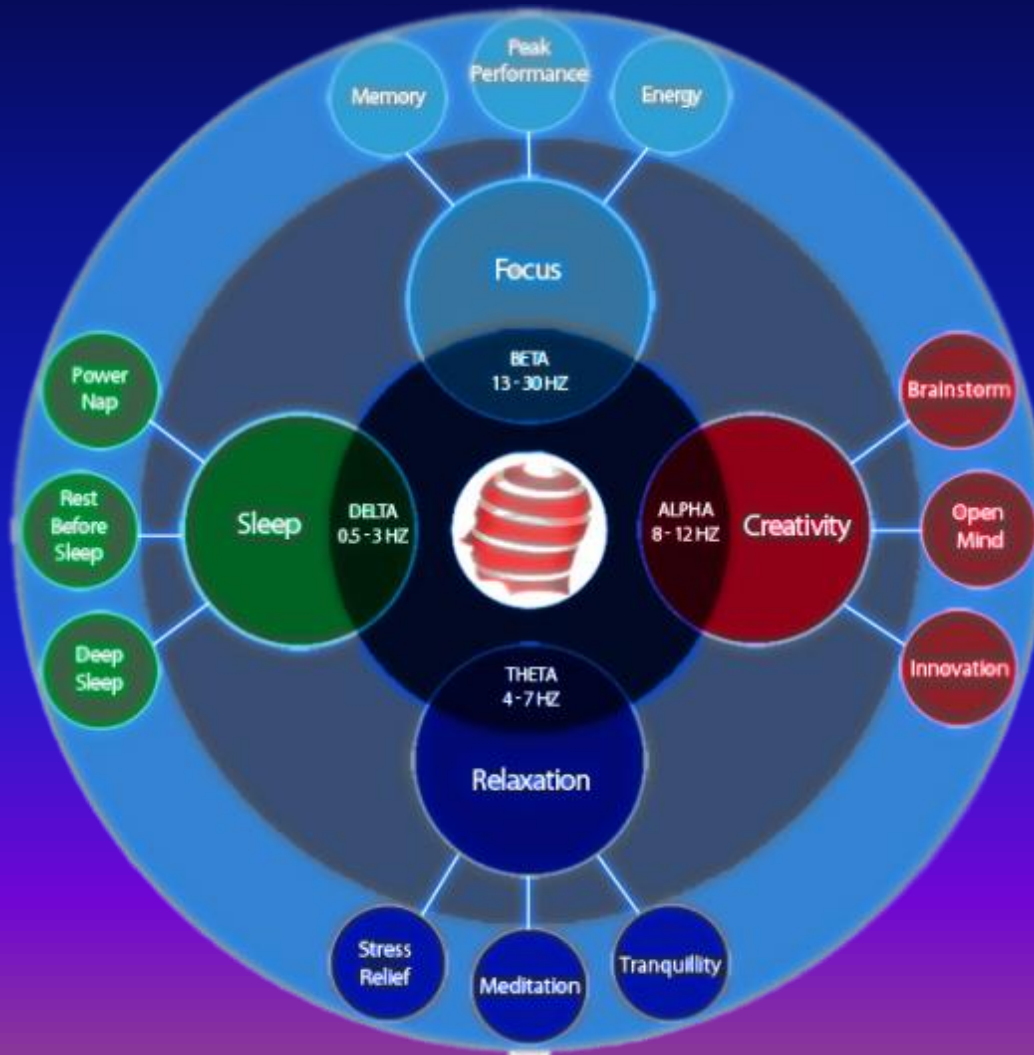
# Memory catalysts

- Visual workplaces
- TRIZ, La Salle, custom





# State-of-mind...literally



## BRAINWAVE FREQUENCIES

Frequency	Proper Expression	Improper Expression
<b>Delta</b> 1-4 Hz	Deep Sleep.	Deep axonal/glia injury.
<b>Theta</b> 5-7 Hz	Dreamy, pre-sleep, hypnagogic, creativity.	ADHD, dementia, Closed-head injury-especially when eyes-open.
<b>Alpha</b> 8-12 Hz	Main idling rhythm when eyes are closed. Deep meditation, 1 <sup>st</sup> stage of falling asleep, relaxed.	ADD, mild head injury, foggy-headed, too much alpha is associated with internalized anxiety.
<b>Optimal Alpha</b> 10.2-10.8 Hz	The best grad-students have an eyes-closed alpha here.	Near 11 Hz can bring on anxiety and edginess.
<b>Beta 1 / SMR</b> 12-15 Hz	Relaxed attention, calm body, involved in REM sleep.	When continuously present, can indicate Chronic Fatigue Syndrome.
<b>Beta 2</b> 16-24 Hz	Active attention & sharp mind.	Cannot fall asleep.
<b>Beta 3</b> 25-35 Hz	On high-alert, as when under attack. Seen in flight-or fight response.	High physical tension and anxiety. Cannot fall asleep or reason well.

- Music in the office
- Binaural beats
- Meditation
- Exercise
- Collaborations
- Competition

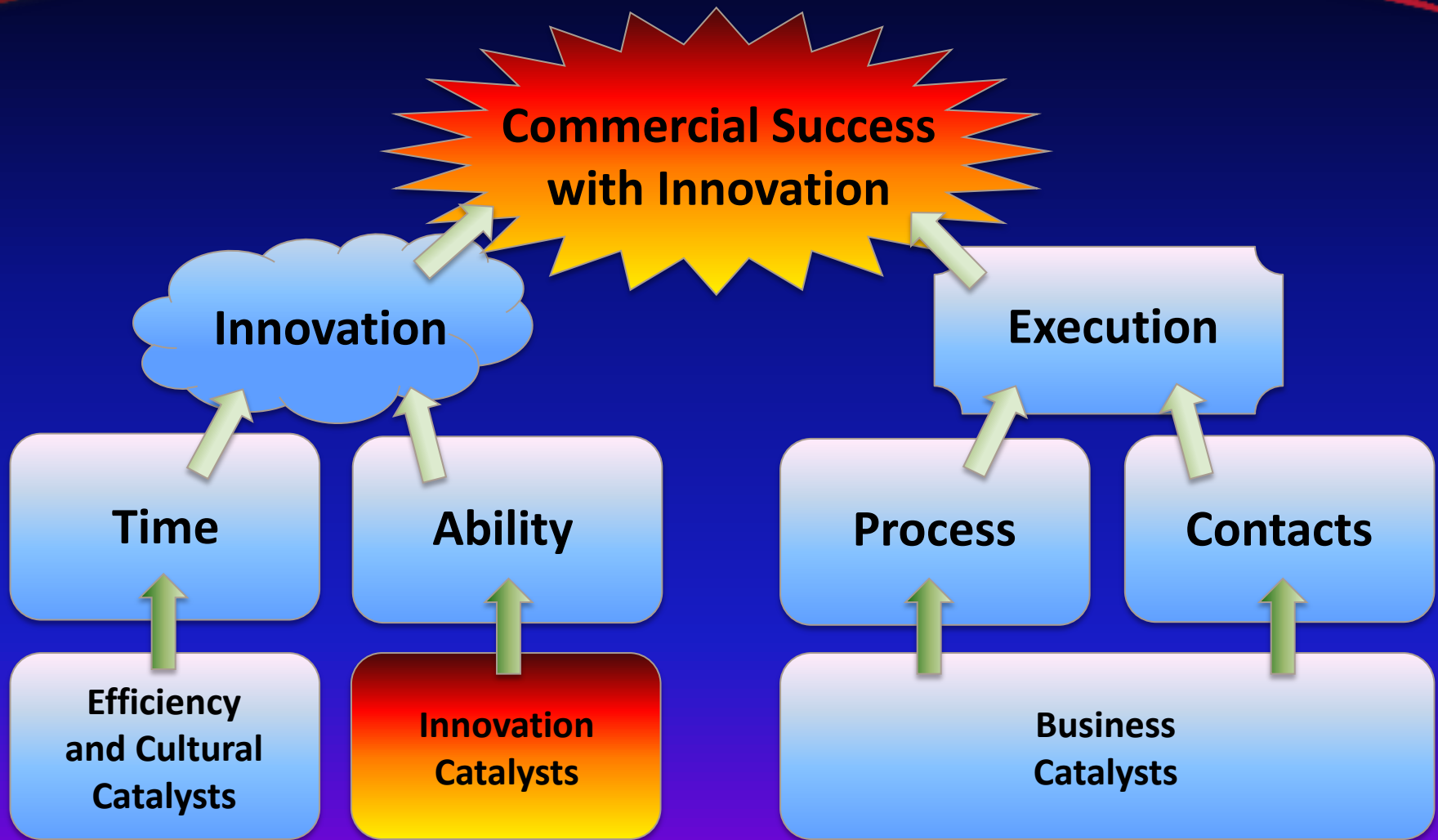


# Helping Set the Table

- Problem and needs statements
- Brainstorming and Protostorming
- Refusal to accept the status-quo
- Never being afraid of failure

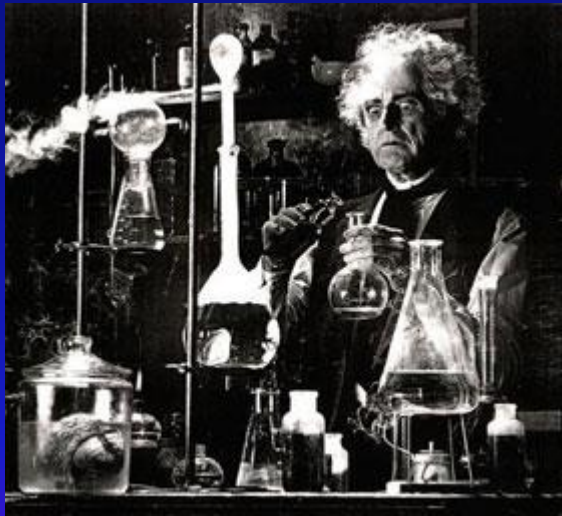


DJO GLOBAL MARKET NEED			
NEED	WHY IMPORTANT?	TYPE	
VEHICLE	LOW COMPLIANCE OR REFUSAL TO TRY PRODUCT	TECHNICAL/MEDICAL	
STINK	REDUCES ADOPTION & COMPLIANCE	TECHNICAL	
SPOITS	OFFER A DIVERSE LIGAMENT BENE LIGAMENT, BONE, JOINT OR PLAYERS ARE WANT TO WEAR	TECHNICAL	
+KEEP IN CAR +READY TO USE +EASY FRIENDLY	TOO HIGH DEMAND FOR KNEES, ETC. AFTER PLAYING SPORTS, ETC.	MARKET	
IMPORTANT TO ASSEMBLE	CAUSES PRODUCT DEGRADATION - QUALITY ISSUES	TECHNICAL	



# Efficiency enablers

- Lean process and product development



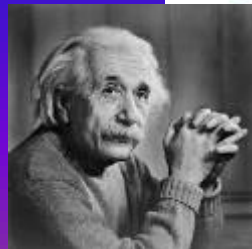
- Knowledge and set-based design
- A3 thinking for problem solving, project management, knowledge capture etc
- Visual workplaces and processes
- LAMDA, DMAIC, MAGEC, Agile, Stage-gate

- Culture

- Accepting and allocating time for risk
- Passion, focus, play

# Innovation Enablers

- Adjacency immersion
- Active observation
- Skill depth
- Building
- Creativity, artistry, play
- Memory catalysts
- State-of-mind
- Needs statements
- Allocating time
- Accepting risk and failure
- Do it, try it, go for it!





# Thank You!

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Cherish your visions and your dreams as they are the children of your soul,  
the blueprints of your ultimate achievements.



-Napoleon Hill