

Welcome to Creativity, Innovation and Intellectual Property (LCMB7007)

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Psychological contract for this module

RIGHTS

- Effective and engaging lectures
- Supportive seminars
- Submission of draft assignment (one occasion)
- Formative feedback (one occasion)

RESPONSIBILITIES

- Attendance
- Punctuality
- Silence & Phones off
- No in & out except emergency
- Full engagement
- Full participation

Creativity; Past, Present & Future.....

- *“How Can we Know Where We’re Going Without Knowing First Where We ‘ve Been?”*



Creativity: What is it???.....

“The ability to create and innovate has been observed throughout history and even though the fundamental tools may have changed the ability has been prevalent in every civilisation” (Hisrich, Peters and Shepherd, 2005, p. 8).

“May our species be resurrected and awakened by the Spirit of Creativity for this coming century”
(Fox, 2002).

A vibrant, cartoon-style illustration of the Greek pantheon on Mount Olympus. At the top center, Zeus sits on a golden throne, wearing a blue and gold robe and holding a lightning bolt. To his left stands Athena in a red and gold dress, holding a shield and a bird. To his right stands Apollo in a blue and gold robe, holding a lyre. In the foreground, various other deities are depicted: Artemis with a bow and arrow, Hermes with a caduceus, and others in various poses and outfits. The background shows a blue sky with white clouds and a mountain landscape.

(Thorsby, 2001, p. 95).

(Thorsby, 2001, p. 94).

A Gift from the Gods or a New Phenomenon?

Or...Could Both Be True????..... Maybe?

<u>Natures Creation?</u>	<u>or</u>	<u>Human Creation</u>
 Venoms & Poisons	or	Anaesthetics
 The Leaf	or	Solar Panel (energy from light)
 Brain	or	Computer/Electronic Circuitry
 DNA	or	Computer Program
 Ear Drum	or	Microphone
 Eye	or	Camera (lens, focus, iris, film)
 Eye Lid	or	Windshield Wiper
 Tears	or	Wiper Fluid
 Incisor Teeth	or	Knife
 Heart	or	Pump
 Spinal Chord/Nervous system	or	Communication/Telephone Cables
 Song Birds	or	Music

Creativity: Nature or Nurture?

- If we want to be great musicians what do we need?
 - A good “ear” – which may have some biological origin
 - Talent – again, an innate trait.
 - But also THEORY, STUDY, PRACTICE, PRACTICE, PRACTICE!
- If I am super-talented through natural chance, I may become a great pianist – but only if I study hard
- If I am not super-talented but I study hard, I may not be the greatest pianist in the world, but I can certainly become competent – and even make a living from it.

Creativity: Nature or Nurture (2)

- If business creativity depends on nature, then only a few of us can operate in that sphere.
- Result – business grinds to a halt!
- Luckily, we know, from experience and from research that we can learn techniques which support creativity.
- So, we may not all be creative business gurus who come up with fabulous ideas while sitting in our armchairs
- BUT
- We can apply creative techniques and thinking processes which help us develop new ideas and keep

Why is Creativity Important?

business sectors seek novelty

- Consumer products
 - Media
 - Fashion
 - Travel
- Even seemingly conventional sectors respond to novelty, e.g. medicine seeks new formulations of existing drugs.
 - Note that some novelty may be “better”, e.g. better medicine, some is simply a response to the desire for something new, e.g. fashion.
 - So, a continual drive for novel developments suggests that creative thinking is key to success.

Creativity

“There is no doubt that creativity is the most important human resource of all. Without creativity there would be no progress, and we would be forever repeating the same patterns”

(Edward de Bono).

Who is Creative?

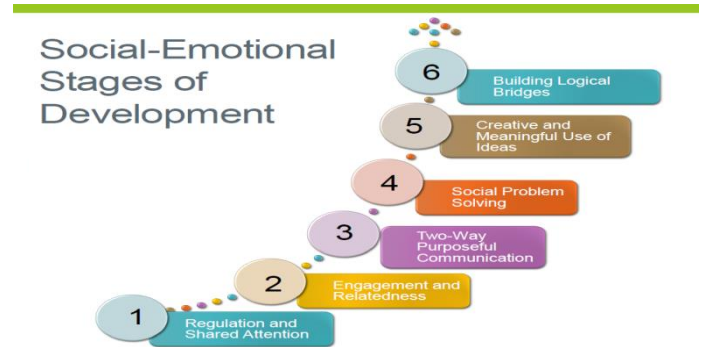
- Are creative people born or made?
- Think back to your first year management studies and discussions of what constitutes an entrepreneur, and whether these skills can be learned.
- The literature suggests that creativity can be innate (you're born with it), but can also be learned (you get better with practice).

Two views of Creativity

The Elite View



V's



The Developmental View

The Elitist View...

- Getting New & Valuable Ideas
- A Rare Talent
- Creating Great Works of Art or Scientific Discoveries
- Unable to be Taught
- Not Relevant in My Job/ Organisation
- A Lonely Individual Process

The Developmental View...

- Available to Everyone
- Evident in Personal & Modest Insights
- Released Through Training & Development of Personal Potential
- Within the Scope of All Jobs
- Encouraged or Discouraged Within Groups According to their Climate
- Escape from 'Personal Stuckness' & Reveals Itself in Results Which are Original & Potentially Valuable

Which View Do You
Agree With?

The Reality.....

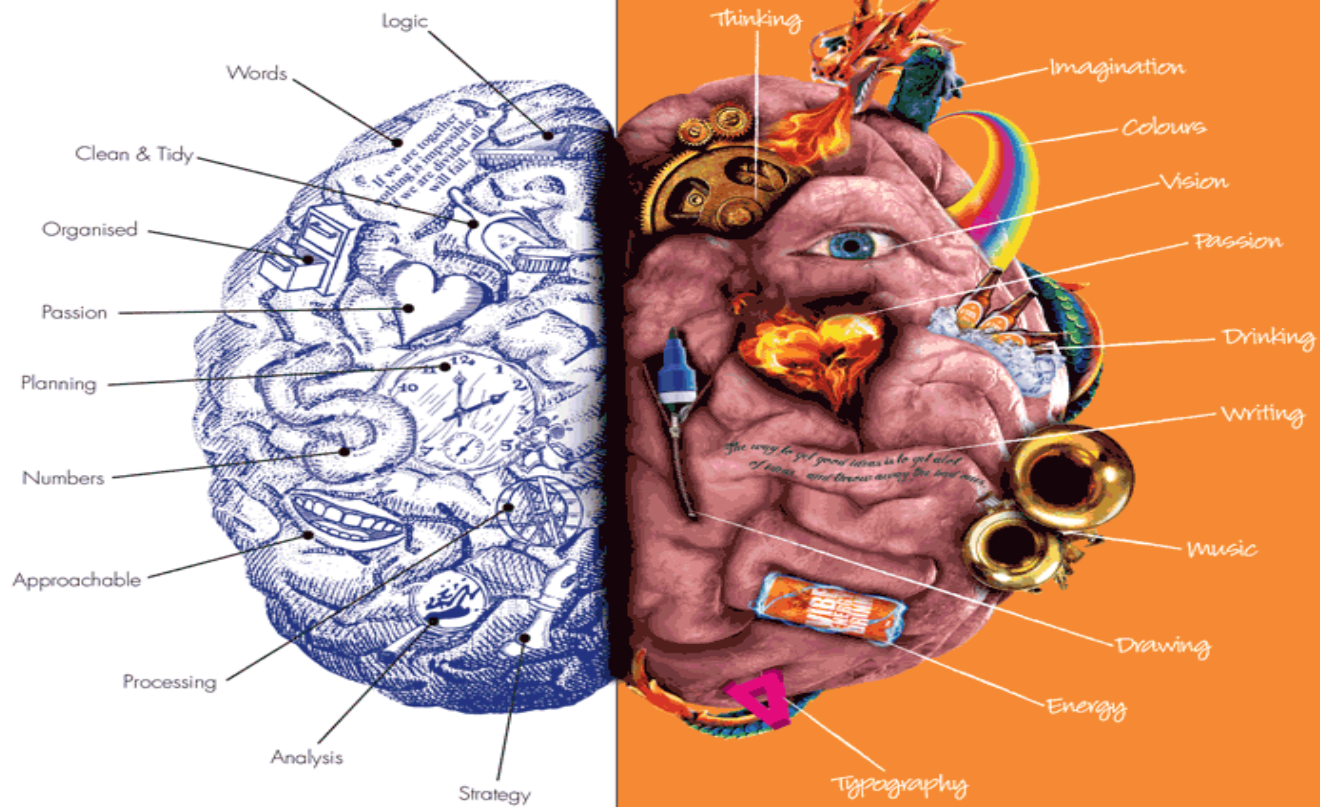
- Creativity Is Not Exclusively for 'Elite' People
- It Can be Developed in All Persons
- Creativity is a Personal Problem-solving Process of a Non-routine Kind
- It Can be Learned, Practiced & Successfully Applied by all – in Every Walk of Life

Can We Learn

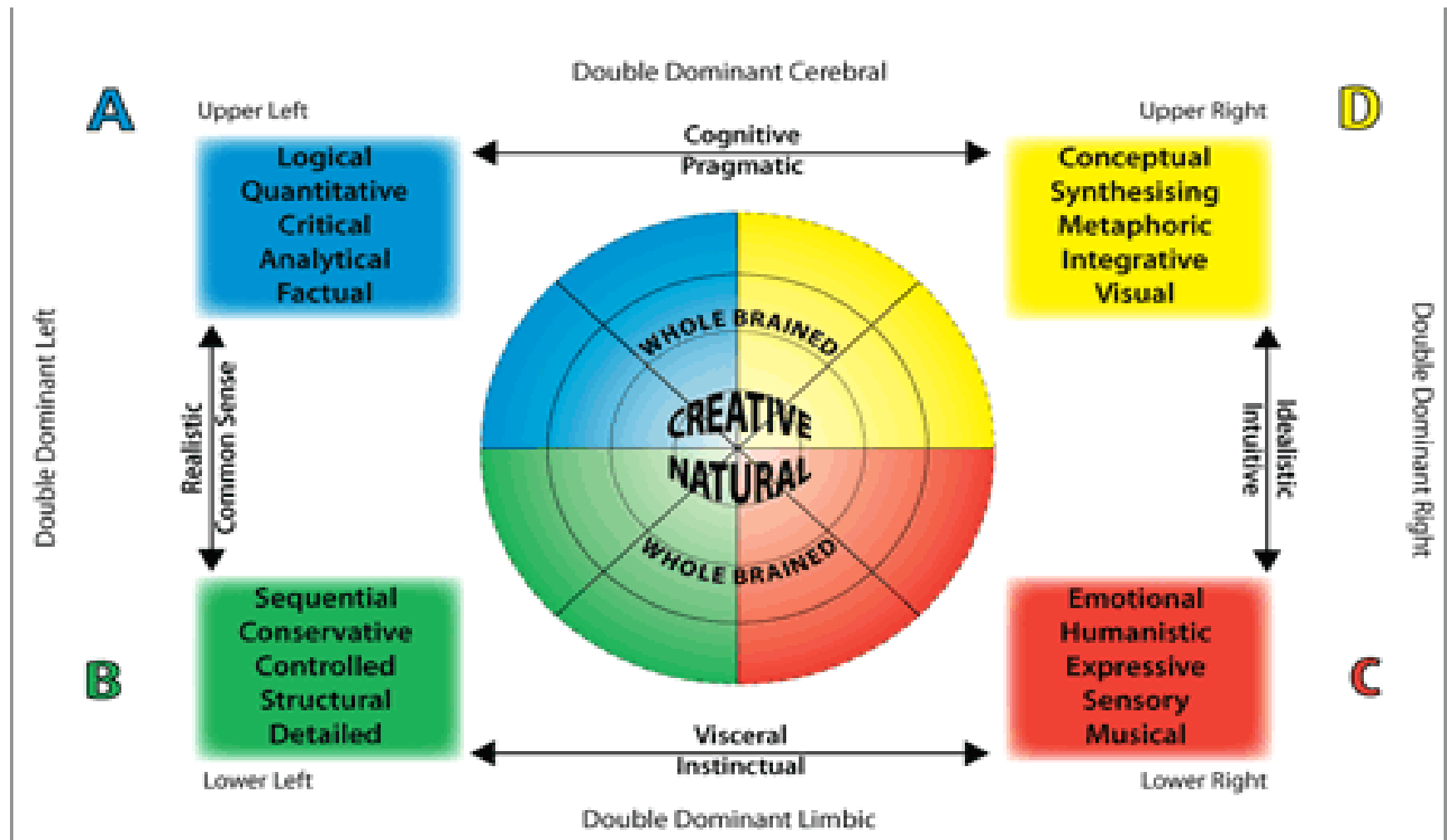
We can argue that although we might not be able to learn how to turn ourselves into creative people, we can learn how to think about business creatively.

The Role of the Brain

We use both sides



The Whole Brain: Universal Thinking Styles



Three Components of Creativity

- Domain Relevant Skills
- Creative Processes
- Intrinsic Task Motivation



See; Amabile, Philips & Collins,

Creativity

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(Edward de Bono).

De Bono's creative

1. Generating knowledge and awareness
 - Reading, learning, researching, finding out about the world in general and the area in which you wish to operate
2. Incubation
 - Time for reflection
3. Idea generation
 - Using your own knowledge and creative thinking techniques e.g. brainstorming, to create ideas
4. Evaluation and Implementation
 - Choosing your idea and making it work!

Creativity

1. What?



2. How?



3. Why?



1. The dreamer
2. The realist
3. The critic

SCAMPER



Substitute

Replace a part of your product, service or process with another



Combine

Combine ideas, processes or products into one more efficient output.



Adapt

Adapt an existing idea that might not have worked before to solve a problem.



Modify

Modify an aspect of your situation or problem, for example by magnifying or minifying them and see whether it gives you a new insight or whether it adds any value.



Put to another use

Put current processes or products that were intended for a specific purpose to another use to solve problems.



Eliminate

Eliminate or simplify a process or idea to get to improve it, but also to identify its most important aspect.



Reverse

Reverse the orientation or direction of a process or product, do things the other way around, completely against its original purpose.

Type of Innovation

- Product Innovation
- Process Innovation
- Service Innovation

Types of Service Innovations

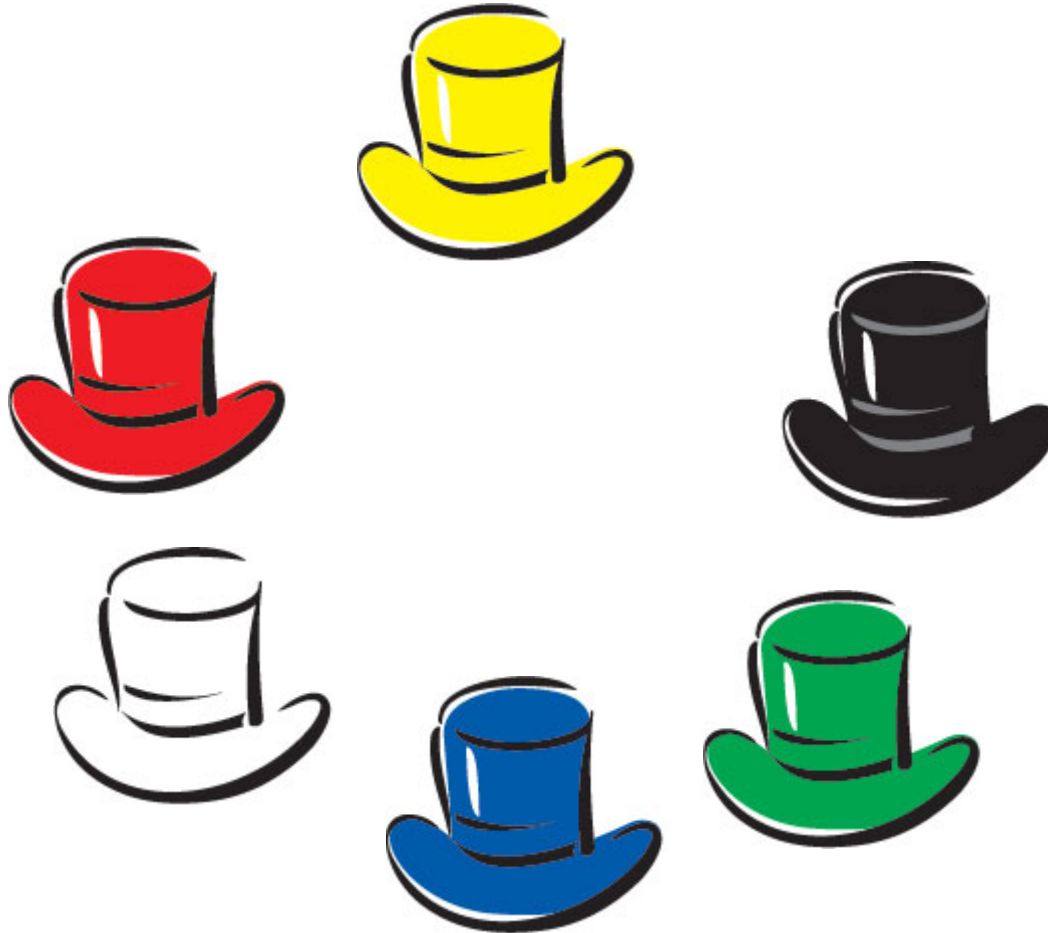
- Total innovations
- Existing services
- Evolutionary innovations

Towards:

- Product Innovation
- Process Innovation
- Service Innovation

Six Hats Thinking

(De Bono 1985)





White Hat: Information focuses on the data available and what you can learn from it, in particular examining the gaps in the knowledge you have and either trying to fill them or taking account of them.



Red Hat: Feelings looks at problems using intuition, gut reaction, and emotion as well as getting you to think about how others will react emotionally to the issue and how to understand the responses of people who may not follow your reasoning.



Yellow Hat: Benefits . At this stage, you begin to think positively and view all the benefits in an optimistic light, particularly in terms of the value of the decision. It is designed to keep your thinking positive.



Black Hat: Caution. Using 'Black Hat' thinking, you are encouraged to look at all the bad points of the decision both cautiously and defensively to understand why it might not work. This highlights any weak points in a plan and allows you to adjust, eliminate or prepare contingency plans to counteract them.



Green Hat: Creativity. This is where you can develop creative solutions to a problem through a unrestrictive way of thinking. This means very little criticism of ideas and is the point at which a number of creativity tools can be implemented.

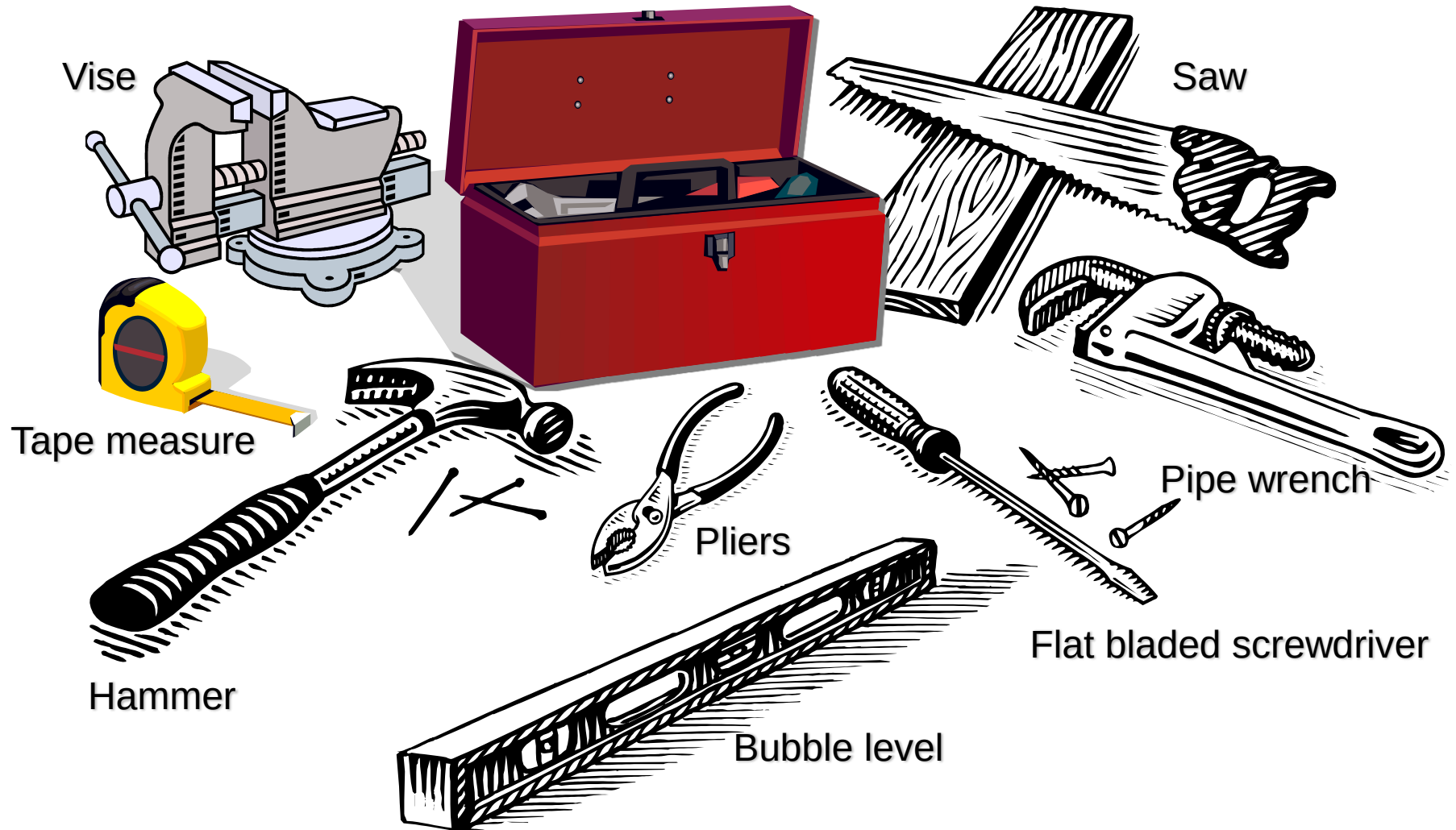


Blue Hat: Managing the Thinking. The final hat stands for process control and is generally worn by those chairing meetings. It comes into its own when ideas are drying up or thinking becomes stagnated in which case the 'wearer' may direct things towards 'Green Hat' thinking to generate creativity or 'Black Hat' thinking when a contingency plan is called for

About **SIX** hats

Which hat would like to wear? Why?

Which is the Most Versatile Hand Tool?



Flat Bladed Screwdriver

- Screw
- Hammer
- Chisel
- Pry bar
- Punch holes
- Set nails
- Stir liquids
- Putty knife
- Score and cut
- *And the list goes on...*



Which innovation

Innovation / Creativity:

Provides the means for businesses to do something better!

- Leverages other resources
- Enables and enhances business processes – *Facilitates efficiency and effectiveness*
- Seizes competitive advantages
- Levels the playing field – *Small businesses can look and behave like big businesses*
- Extends the business beyond its boundaries – *Strategic alliances, strategic outsourcing, supply chain management*
- *And the list goes on...*

Which Innovation?

- Operational effectiveness is *not* strategy:
 - Operational effectiveness means performing similar activities *better* than rivals. It is necessary, but not sufficient, for competitive advantage.
 - Strategic positioning means performing *different* activities from rivals' or performing similar activities in *different* ways:
 - Variety-based positioning (producing a subset of products/services)
 - Needs-based positioning (serving needs of particular group of customers)
 - Access-based positioning (using different ways to reach customers)
- Innovation involves trade-offs, choosing what *not* to do.

Edward De Bono: 'Six' Thinking Hats (1985)



- Archives, Reports, Media, Articles, Books, Biographies, Images, Audio & Digital Media



- Does my Direction Feel Right? Could I be Looking in the Wrong Place? Asking the Wrong Questions?



- What Can I do Different? Is there Anything More to Look at? What are the Weaknesses?



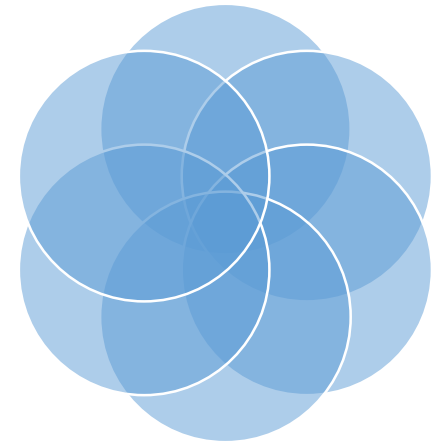
- Why is it Worth it? For Whom is it of Interest? Why Can it Be Done? Because it Can.....



- Alternative Ways? New Methods or Tools? New Stance? New View of Your Original Stance?



- What Has Been Done? What is Still to do? How to Proceed?



So What is Creativity?

- It can be anything.... While we often associate the term with artistic endeavour – writing, painting, making music. We can be creative in business life as well.
- “Creativity is... the ability or quality displayed when solving hitherto unsolved problems, when developing original and novel solutions to problems others have solved differently, or when developing original and novel... products” (Parkhurst, 1999).

What does this tell us about creativity?

It tells tell us that:

- Creativity can be about developing new products

BUT

- It can also be about developing new solutions.

Ideas Can Start with Solving Problems

- Solving “Points of Pain”:
 - To Notice Inefficiency, Inconveniences, & Other Forms of “Points of Pain” & Use these to Build New Business Opportunities
 - And
 - Solution

Solutions?

- What do we mean by solutions?
- In this context, it could mean
 - new processes to help us do something better
 - new ways of using existing products
 - new services to supply to new or existing customers etc.
- New ways of thinking about things!

- So... If Creativity is Solving Problems... What Is An Innovation?

To Innovate....

- According to the New Oxford Dictionary (2004, p. 942), innovation means to be able to: “Make changes in something established, especially by introducing new methods, ideas, or products”.
- According to the UK government, “innovation is the process by which new ideas are successfully exploited to create economic, social and environmental value” (BIS 2014, p.7).
- In the mid-twentieth century, economist Joseph Schumpeter (1950) pioneered the categorisation of innovation as the creation of something ‘new’ that creates and adds value for those who interact with, or consume, it. Something ‘new’ can also mean the updating of something which already exists in order to take advantage of a specific segment or a newly-identified or emerging market.

Schumpeter's Innovator

- Schumpeter (1934) distinguished inventions from innovations and identified 'Five Types of Innovation'



Disruptive and Sustaining Innovations

- Christensen (1997), identified two types of innovations: *disruptive* innovations and *sustaining* innovations.
- The former, *disruptive* innovations involve a new value proposition by which new markets are created.
 - In such instances, individuals or business organisations seize upon basic inventions and transform them into economic innovations, thereby disequilibrating and altering the existing market structure, then waiting until the process eventually settles down before the next wave of innovation begins.
- In contrast, the latter, *sustaining* innovations are best thought of as improvements to existing products, processes or markets.

What is innovation?

“When an enterprise produces a good or service or uses a method or input that is new to it, it makes a technical change. The first company to make a given technical change is an innovator. Its action is innovation.”

Schmookler (1966)

“Innovation by definition must be successful in the market. “The test of innovation, after all, lies not in its novelty, its scientific content, or its cleverness. It lies in its success in the marketplace.”

Drucker (1993)

It is the creativity of an entrepreneur that results in invention [creation of new knowledge] and innovation [application of knowledge] to create new products, services or processes.

Department for Business, **Innovation** and Skills

“Innovation is the process by which new ideas are successfully exploited to create economic, social and environmental value.”

(BIS, 2014)

What is Innovation?

- Degree of Newness:
 - Radical Innovation
 - Incremental Innovation

Table I

Incremental improvement versus radical innovation

Characteristics	Incremental improvement	Radical innovation
1. Approach	Collectivism, group efforts, system approach	Rugged individualism, individual ideas and efforts
2. Advantage	Works well in slow-growth areas	Better suited to fast-growth areas
3. Change	Gradual and constant	Abrupt and volatile
4. Effect	Long-term and long-lasting	Short-term but dramatic
5. Effort orientation	People	Technology
6. Evaluation criteria	Process and efforts for better results	Results for profits
7. Involvement	Everybody	Select few "champions"
8. Mode	Maintenance and improvement	Scrap and rebuild
9. Pace	Small steps	Big steps
10. Practical requirement	Requires little investment but great effort to maintain it	Requires large investment but little effort to maintain it
11. Spark	Conventional know-how and state of the art	Technological breakthroughs, new inventions, new theories
12. Time frame	Continuous and non-radical	Intermittent and non-incremental

Source: Based on Imai (1991, p. 24)

Examples of Innovation



- Glass (3500 BC)
- Modern Public Library (1850-1945 depending on country)
- Electronic calculator (1961)
- Mobile phones (1973)
- World Wide Web / Internet (1989)
- Email (1993)

What is A New Innovation?

- What do you define as **new**?
- Can mean different things to different people
- New to the world (10%)
- New to the firms (20%)
- Additions to existing products/process (26%)
- Improvement and revisions to existing products/process (26%)
- Repositioning (with different purposes) (7%)
 - New to the market (geography + segments)
 - New to the season
- Cost reduction (11%)

(See; Booz, Allen & Hamilton, 1982; Griffin, 1997)

Creative New meaning with New Innovation



Revolutionise Existing Concepts



Open versus Closed Innovation

Closed Innovation Principles	Open Innovation Principles
Most of the smart people in our field work for us	Not all the smart people work for us, so we must find and tap into the knowledge and expertise of bright individuals outside our company
To profit from R&D, we must discover, develop and ship ourselves	External R&D can create significant value; internal R&D is needed to claim some portion of that value
If we discover it, we will get it to market first	We don't have to originate the research in order to profit from it
If we are the 1st to commercialise we will win	Building a better business model is better than getting to market first
If we create the most and the best ideas in the industry, we will win	If we make the best use of internal and external ideas, we will win
We should control our intellectual property (IP) so that our competitors don't profit from our ideas	We should profit from others' use of our IP, and we should buy others' IP whenever it advances our own business model

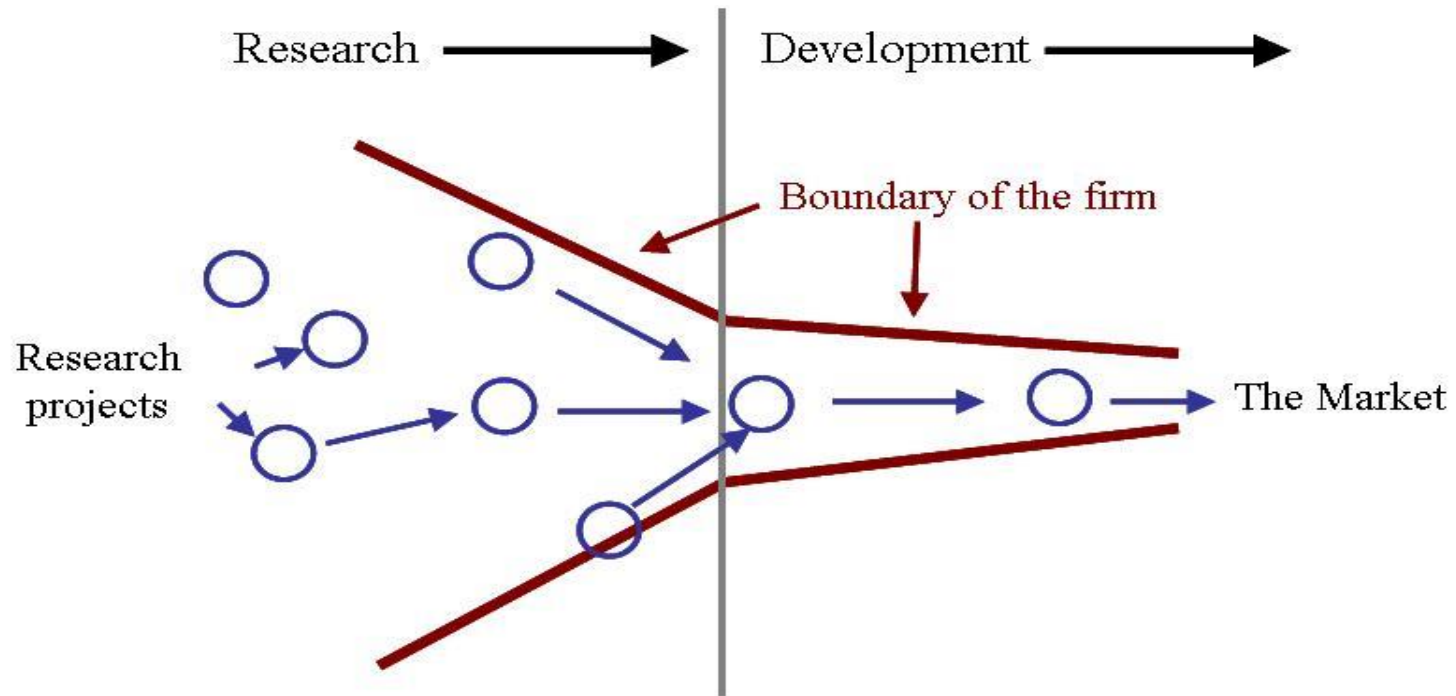
Open versus Closed Innovation

Under the concept of innovation that prevailed during most of the 20th century, companies attained competitive advantage by funding large research laboratories that developed technologies that formed the basis of new products that commanded high profit margins that then could be ploughed back into research.

The closed innovation paradigm has eroded due to the following factors:

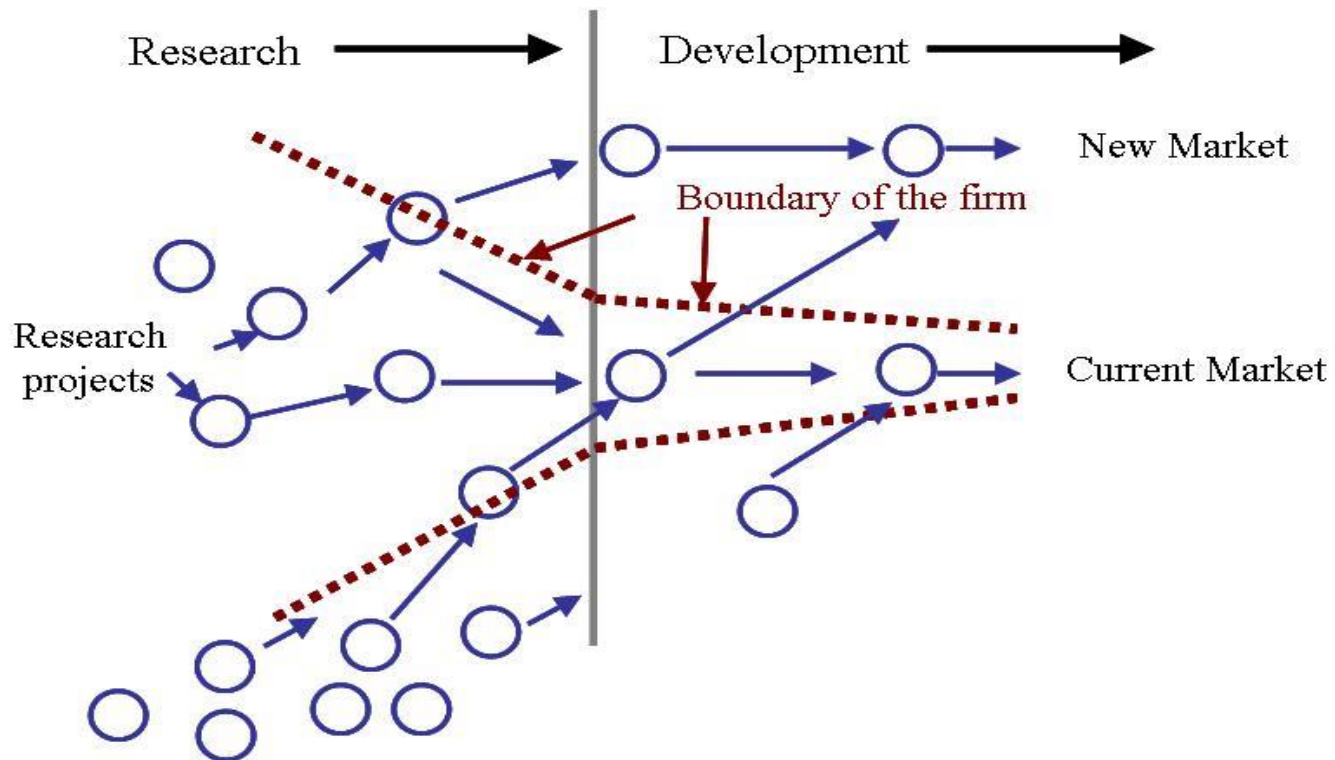
- Increased mobility of skilled workers
- Expansion of venture capital
- External options for unused technologies
- Increased availability of highly-capable outsourcing partners

Closed Innovation



(Chesbrough, 2003)

Open Innovation



(Chesbrough, 2003)

Not all Innovations are Successful...



Neither are All Fashion Trends



Really!?!?



- Innovation = Invention + Commercialization

- Are all Innovations Opportunities?

Opposing Views...

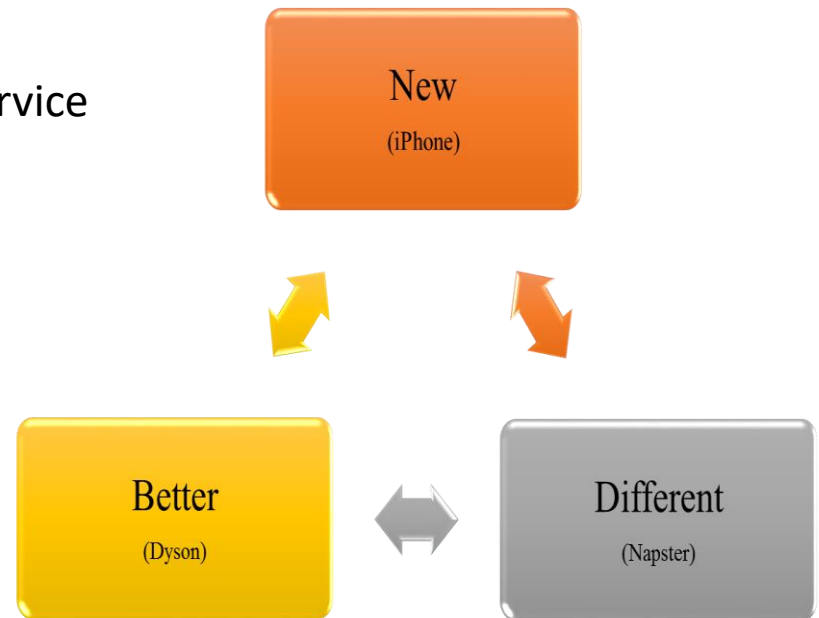
therefore see that there is a difference between the commonly held definitions of “Creativity and Opportunity” and the definitions used in a business context.

- We may think that creativity is related to artistic or cerebral activity and opportunity is a matter of chance.
- Business management theory suggests that in a commercial context, creativity can be learned or developed and that it need not relate to complete novelty; opportunity can be created or developed.

What's an Opportunity?

Opportunity has the qualities of being attractive, desirable and timely and is anchored in a product or service which creates value for buyer or end user”

- A new or improved product
- A new service
- A new means of production
- A new way of distributing the product or service
- An improved service
- New combinations
- Or a hybrid of the above



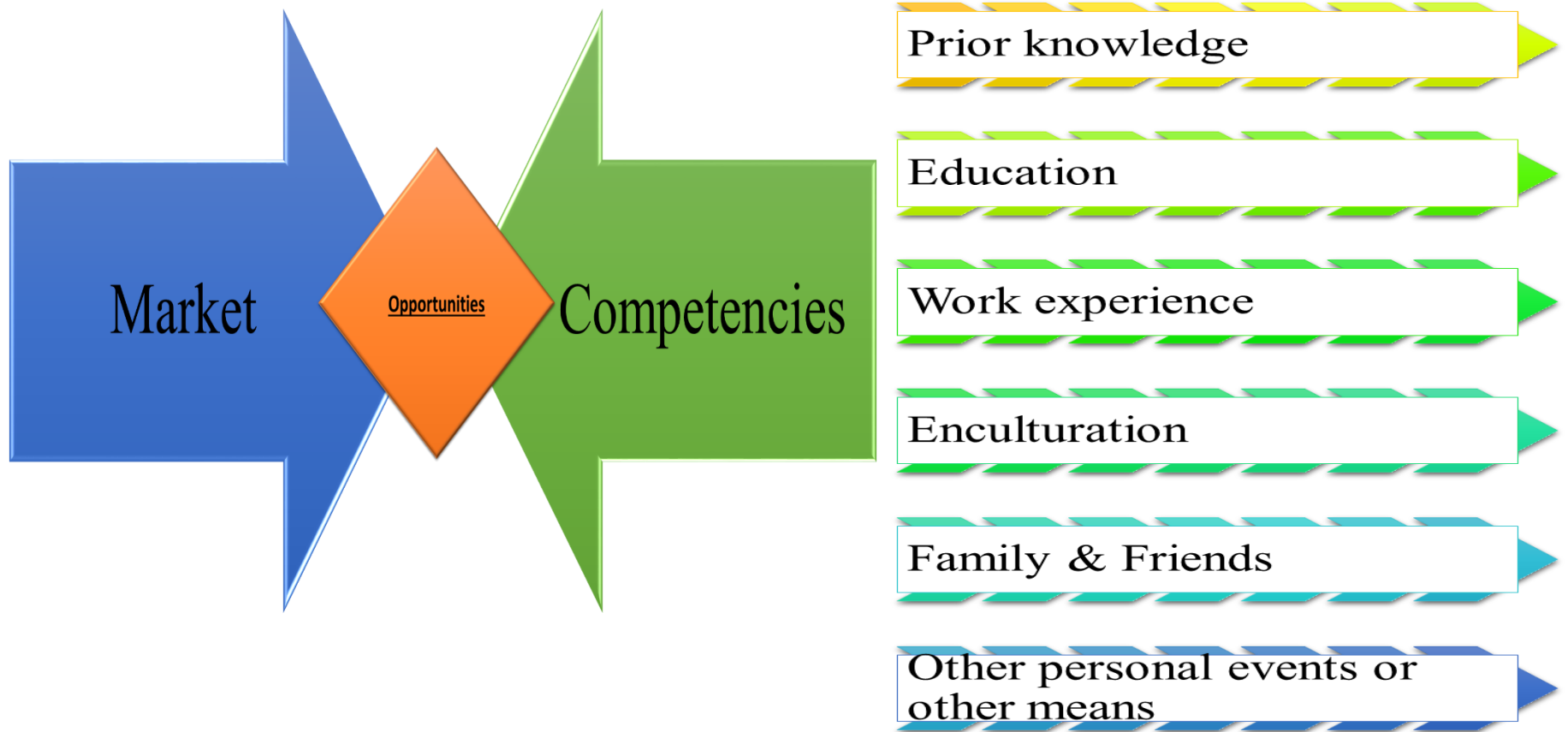
Recognising an Opportunity

- Opportunities are not like raindrops – they do not fall at our feet.
- Well, not usually! From time to time something might just happen which allows an entrepreneur to move forward.
- However, if we wait for an opportunity to turn up, we will probably never succeed.
- As creative business people we seek or develop opportunities.

So...

- Do Ideas = Opportunities?
- Do Problems = Opportunities?
- Reality - An Idea is Only an Opportunity when It:
 - Adds Value to Consumer
 - It Solves a Problem
 - It Can Make Some Money (Communicate Some Value to Other Stakeholders)
 - It is a Good “Fit” with the Entrepreneurial Team
- Timmons & Spinelli (2007)

Factors Influencing the Creation/Discovery of Opportunities



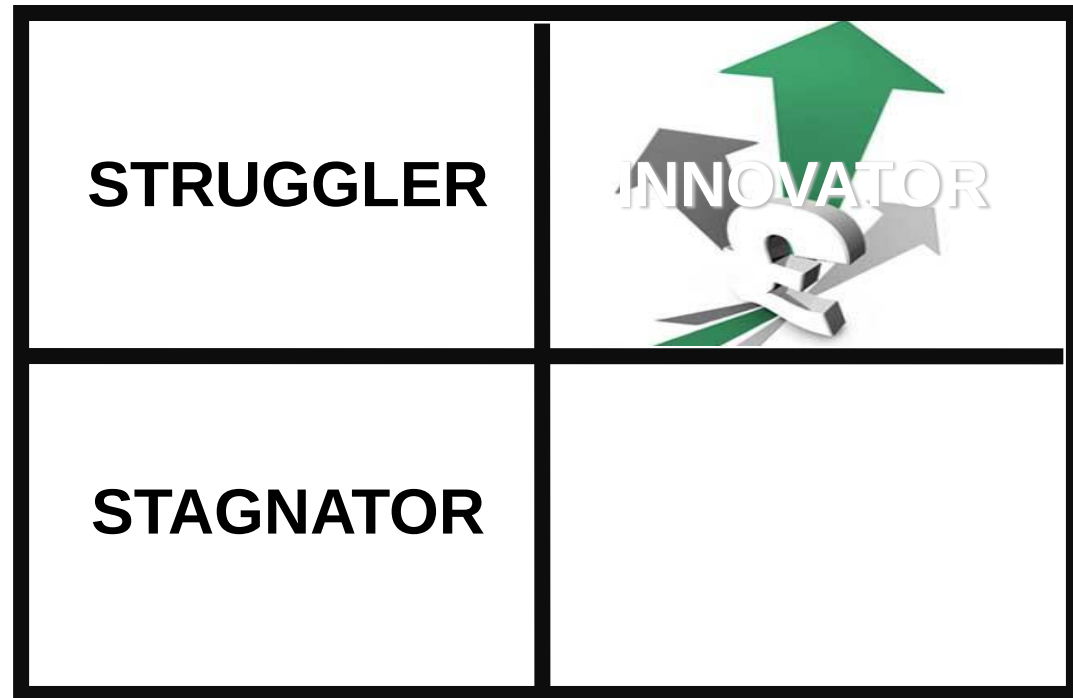
Drucker's Opportunity Scan

- 1.The unexpected - can we react to change?
- 2.Incongruity – can we cope with the difference between what we thought would happen and what actually happened? This could create an opportunity.
- 3.Inadequacy in underlying processes – can exiting processes and procedures be improved?
- 4.Changes in our industry or our market – can we respond positively?

- External

- 1.Changes in demographics – age, income, health, etc.
- 2.Changes in perception, mood, meaning - can we react to changes in fashion, culture, attitudes.
- 3.New knowledge – science and industry affect our products and processes.

Creative Invention Vs Innovative Opportunity

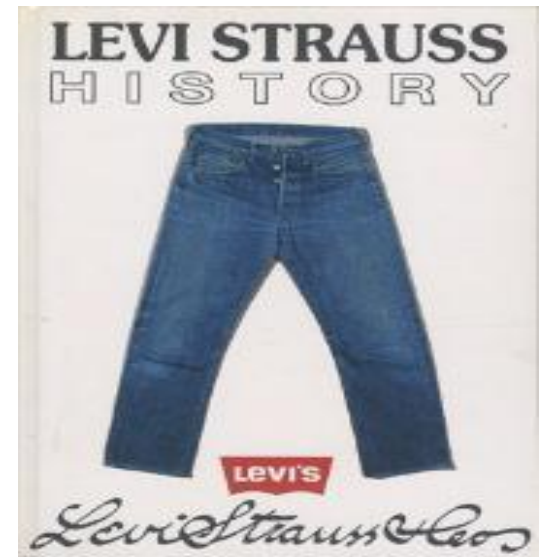


Creativity and Commerce

think of creativity in terms of ways of thinking which support commercial opportunities, whether in developing new processes, services or products.

Example: Rise of Levi's

- Problem:
 - Working Clothes for Mining Workers do Not Last
- Solution:
 - First Pair of Jeans



Starting ideas....

- Remember... Ideas Start With Solving Problems
- Any Problems are Big Opportunities.
- No Problems, No Solutions, & No Reasons for Firms to Exist.
- No One Pays You to Solve a Non-exist Problem (*Vinod Khosla, Sun Microsystems*)

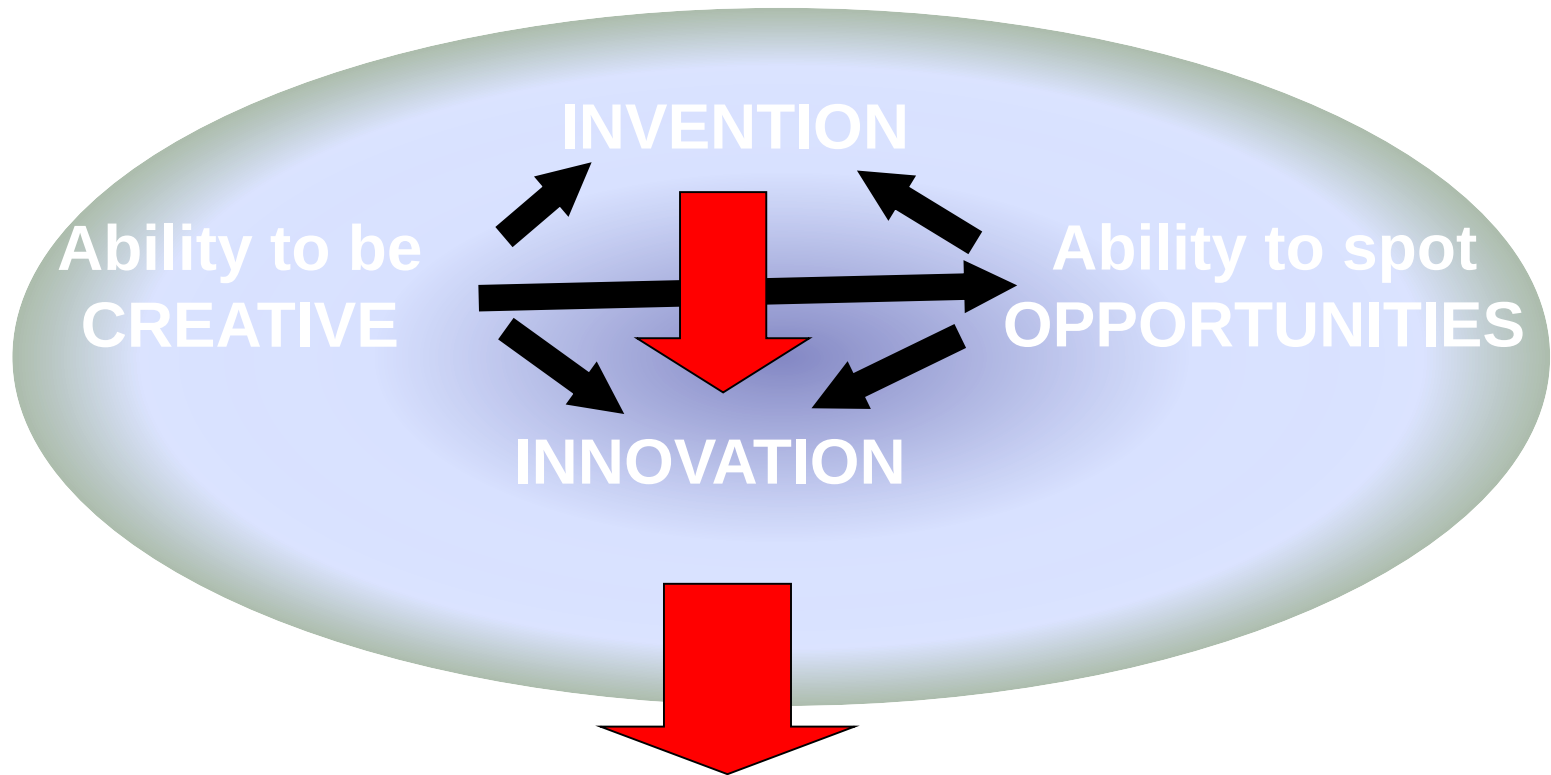
Solving Problems”

- Take care with this use of the word “problem”...
- The normal use of this word might suggest that there is something wrong
- In a business context, we might use the word simply to represent something which makes the customer’s activities less efficient/enjoyable/simple
- So, a “problem” might be something quite trivial, everyday or simple – however, by providing a cost effective solution, we please our customer and make money
- Examples
 - Velcro – a simple alternative to the shoelace.
 - A keyring that beeps – you can find your keys anywhere in the room
 - Goretex – water resistant jackets.

Attributes of Creative Thinking

- Flexibility – willing to look at an issue from many angles, not set in our ways.
- Originality – attempts to find non-typical responses to problems.
- Non-judgemental – not rejecting a potential solution without giving it appropriate consideration

Creativity, Invention, Opportunity & Entrepreneurship



Creating Creativity

- They approach a problem systematically

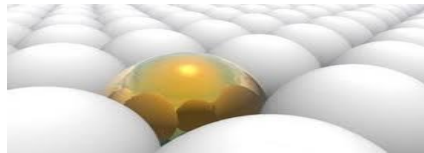


Stages in Creative Thought

- Preparation



- Incubation



- Insight



- Evaluation



- Elaboration



Preparing the idea

Incubation of the key skills and resources required

The gathering of insight from the market research

Evaluation of the consumer feedback

And the elaboration of the idea in order to ensure successful development

What Stops Business Creativity?

prevent or slow the development of new ideas:

- Fear – change is always frightening.
- Risk – am I risking my established business?
- Convention – we've always done it this way.
- Self-doubt – if it's that good, surely somebody else would have made it by now?
- Fear of failure

Readings

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