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e-book: Creativity - the ultimate resource for the years 2000
February 2009

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**“Creativity: the ultimate resource for the years 2000”
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Dear e-Participant,

Welcome to this e-Course! I am confident you will find it of interest, beneficial and, at times, also a bit entertaining.

To begin with, a quick presentation: I am Carlo Scodanibbio, Italian, Engineer, graduated in 1970, and with some 38 years of post-graduate experience in Project Engineering, Plant Engineering, Project Management, Industrial Engineering and Operations Management Consulting. I have been a free-lance Industrial Consultant for the past 28 years, and a HR Trainer for the past 18.

My field of activity is: World Class Performance in the Small and Medium Enterprises. I have operated in several Countries, including Italy, Romania, Malta, Turkey, Cyprus, Lebanon, Cape Verde, Kenya, Mauritius, Malaysia, India, Saudi Arabia, South Africa and neighbouring Countries.

My “real-world” training style is very interactive. I am afraid this won’t be possible in the case of an e-Course, such as this one.

And yet, as a participant in this e-Course, you are entitled to contact me for clarifications or further explanations with regard to the topics of this Course.

You may do so by e-mail: mail@scodanibbio.com

And now let’s start.

The title of this Course is:

“Creativity: the ultimate resource for the years 2000”

Before I get into the fascinating world of Creativity, let me begin this course mentioning a well known “motto”:



....then the world changed....

Yes: the world has changed. It happened a few years ago. Somebody says it happened 7 or 8 years ago. Somebody says it happened 10 or 12 years ago. And somebody else says it happened about 15 years ago. But this is not so terribly important. We all know that the world has changed....

What is very important instead, is that the change occurred during the night, after midnight.... probably at 3 o’clock in the morning, or so... when a lot of people were sleeping... fast asleep.

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So, a lot of people did not notice the change at all – they were sleeping.....
Many people noticed the change in the following days, months, years..... slowly, gradually, they started realising that the world had in fact changed.....
But the majority of people, still today, is not even aware of the change - or, prefer to ignore it.....

The world changed.

Everything changed. After midnight, the world had changed completely its rules, its previous way of being....

It was a radical change, but very particular in its nature. Like a change in state, like a change from ice to water, or from water to steam..... It is always water, but, in its first form (ice, solid), you can walk on it - in its second form (liquid), you can swim in it - in its third form (steam), if you play with it you can be severely burnt.....

Things have changed radically: should you try today to walk on the lake, you might drown.....

As I was saying, many people, including people in industry, are not aware of the change, or prefer to ignore it....

This behaviour is no longer adequate.

Consider this little experiment. Imagine to have a pot of hot boiling water. And now throw a frog into it (NO, DON'T DO IT!!! JUST IMAGINE IT!!).

What will happen?

Think....



It will happen that the frog will jump out from the boiling water at the speed of the light, without even touching it. Why? Because a frog, a “healthy frog” is “reactive” by nature.

Now, do another little experiment. Put a frog in a pot of cold water. The frog will swim in it very happily. Then set fire under the pot. Nothing will change for a while: the frog will carry on swimming, happy as a baby. Gradually, the water temperature goes up. The water becomes “lukewarm”. The frog will still swim very happily in it: she might think she is in tropical water, in a glorious Mauritius beach....

But temperature goes up, more and more. The water warms up, and the frog still swims happily, but just a bit “dizzy”. Eventually the water becomes rather hot: the frog becomes very lazy, and almost stops swimming....

Eventually, as temperature rises even more, the poor frog “cooks” in it, and dies – making some “frog soup”



Why?

Because the “environment” (water) change has gone beyond the frog’s capability of reacting to it - as she would have done in normal circumstances. And the frog dies....

The example is rather representative of many real-world situations, with special regard to enterprises. An enterprise is a living organism with its own features, including its capability of “understanding” the surrounding environment, and its capability of “reacting” to changes. When changes (gradual, like the majority of them) are of such an entity and nature to fall beyond the capability of the enterprise to understand them adequately and to respond to them properly, enterprises may be in trouble, sometimes in serious troubles. Generally, if the reaction to the change is not adequate and timely an enterprise may die. And many enterprises die, like mushrooms after their life cycle....

Then a lot of things can and will be said: “...there were financial problems....” – “...the market became very difficult....” – “...machines were too old, obsolete...” – etc. etc. However, generally, those are “post-mortem” excuses. The crude reality is that the dead enterprise died because it didn’t have the ability and capacity to react to changes beyond its control. Full stop.

Hence, the first message of this course:

Entrepreneurs, people of enterprises, be aware! You live in a changing environment, and that change is fast, continuous, in acceleration. Therefore, learn to “manage change”. This means: learn to detect strong and faint signals of change - understand changes – evaluate their impact – foresee consequences – be proactive – and manage change, rather than being dragged by change up to the point in which it may be too late to bear its impact...

For that, Creative Thinking is essential.

the main parameters of change

The world changed. *Main parameters:*

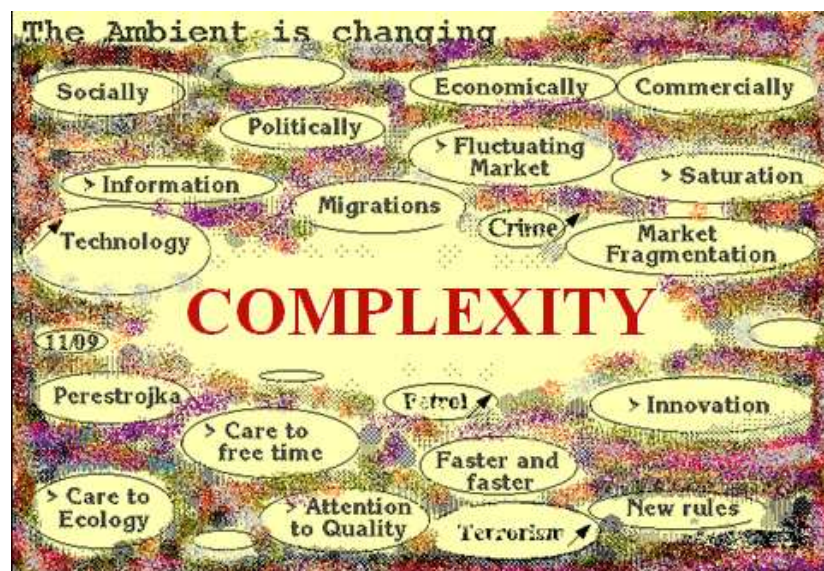
- Social changes, political changes, economical changes, commercial changes
- Legislation (it has increased exponentially in the recent years) – complexity
- Volume of information– growing, complex, available in-real-time - complexity
- Information Technology revolution (instantaneous, accurate, global and economic transfer of data and information) – complexity
- Global Market, borderless and boundless, featuring hot, global competition – complexity
- Clients’ expectations increasing at very high speed, faster than industry’s capacity to respond - complexity

The impact on the industrial system:

- Industry subjected to enormous competitive pressures in all markets (steady, growing and declining). Hence, pressure to offer more for less – complexity
- Industry needing abilities and competencies in a growing number of technologies and disciplines, in order to remain competitive - complexity

The world has changed.

The new key word is “**complexity**”.



Enterprises, today, face a complex environment. Things are well different from 20 – 30 years ago, when the world was “static”, “predictable”.

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I keep on saying that I sympathise very much with entrepreneurs and enterprises' people, because today to remain "healthy" in business is a rather tricky issue, certainly much more difficult than in the past. But, c'est la vie, as they say in France, and all we can do is to acknowledge the difficulty of the situation and face the challenges of this millennium with the right spirit.

After this long introduction (which I am confident you will discover to be essential to understand the spirit of this course), I can now begin moving into the world of Creativity.

I will start with a strong message, mainly dedicated to enterprises' people: forget traditional approaches to competitiveness and success – in this millennium the rules of the game can only be managed in a very different way.



I visit many enterprises. One of my favourite questions to entrepreneurs and top managers is "...what is, to your opinion, the main secret of entrepreneurial success, today?.....".

The answers I get vary from "...finance – healthy finance is the secret...." to "...plant, machinery, technology – only with the most up-to-date technology you can hope to survive and prosper...." to "...marketing – with the correct approach to marketing you achieve results...." to.... – etc. etc.

I disagree. For too long we have thought that the secret for succeeding and competing was finance, or management style, or technology, or.....

This is no longer true.

..the ultimate factor of competitiveness and success today is creativity – strong, deep, effective creative thinking – directed to generate value.....

If you consider that creative thinking can solve brilliantly poor financial situations – that creative thinking is the best asset for every manager, at any level – that through creativity it is possible to invent innovative marketing strategies – that creative thinking applied to machinery and equipment-related problems can (and it has been proved) balance lack of plant performance deriving from age or (apparent) obsolescence – and so on... the simple conclusion is that the common denominator to all "traditional" factors of competitiveness and success is just pure, creative thinking.

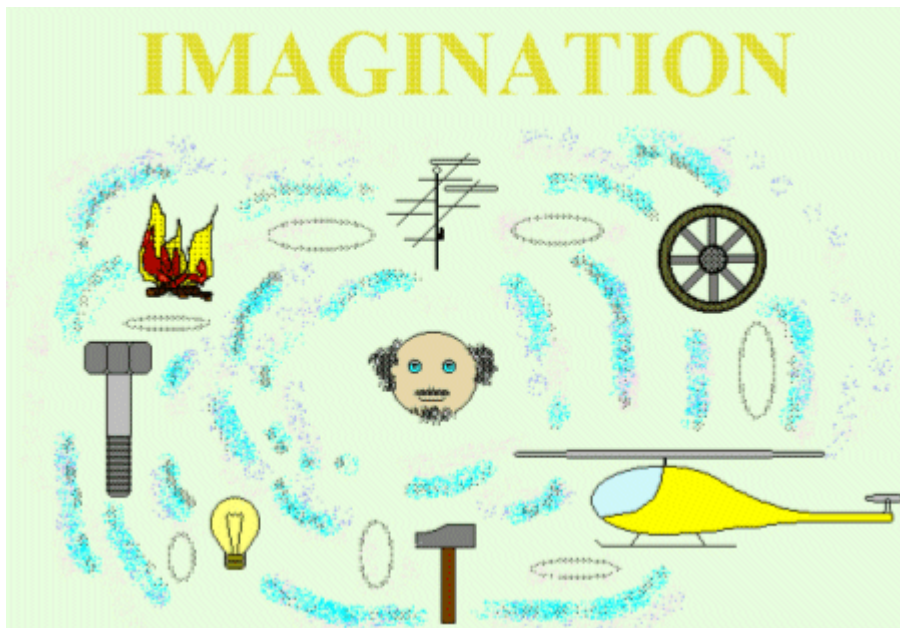
You don't have to believe me now. There is this entire course to prove this statement.

Right. Now you want to know what Creativity means. You will have to be patient... I need to go through a number of steps before being in a position to give you a comprehensive definition of Creativity and Creative Thinking.

creativity

So, what is creativity?

Let's start by defining **Imagination**.



Imagination is the human capability of generating and representing mental “pictures” in our mind’s TV set, in our brain. What kind of pictures? Images, sounds, sentences, visions, dreams, memories, and the like.

The history of civilisation is a huge testimonial of the power of our imagination.

It all started by discovering and then producing the fire. Possibly 10.000s years passed by before a man’s mind imagined that fire could be produced, re-produced and then controlled. That imaginative spark was the start of civilisation.

Then the wheel was discovered. But it remained a simple wheel for a few thousand years. Until someone imagined another use for it, or a development: and it became a mill-wheel. And then a gear and a screw. And then a propeller....

Julius Verne used to say “...whatever a man imagines, another man one day will implement...”. And he visualised in his mind “20.000 miles under the sea” and “From earth to the moon” and “The world tour in 80 days”... all of which have punctually been implemented.

So, shall we reach the stars, one day? Of course we will.

We can imagine that (just think of 1000s science-fiction books on the subject) – we can do that. If we can conceive it in our mind then it’s possible.

The **IMAGINATIVE FUNCTION** is one of the main 4 functions of the human mind. It's got to do with representation and elaboration of ideas. What is an **idea**? Is nothing else than a mental picture, as I said before.

There are 3 other important functions of the human mind, that I should tell you about at this stage. Let's list them all:

1. **PERCEPTIVE FUNCTION** - perception, observation, awareness, focus, attention, concentration
2. **RETENTIVE FUNCTION** - retention and conservation of memories
3. **RATIOCINATIVE FUNCTION** - analysis, calculus, evaluation, judgement
4. **IMAGINATIVE FUNCTION** - representation and elaboration of ideas

In this course, we shall focus mainly on the Imaginative Function (the one that leads to Creative Thinking). But I shall deal from time to time also with the other 3 functions.

In order to understand the fascinating world of Creative Thinking, I shall illustrate a theory (apparently well founded): the theory of the two Hemispheres of the brain. [Guilford & Sperry and others]



It would appear that the main functions of the human mind are handled by the 2 brain hemispheres as follows:

LEFT HEMISPHERE - taking care of "**rational functions**" such as: Memory - Logics - Analysis - Reasoning - Argument - Mathematics - Speech - Calculus - Linearity - Progressiveness - Judgement

RIGHT HEMISPHERE - taking care of "**holistic functions**" such as: Synthesis - Intuition - Aesthetics - Sensations - Imagination - Metaphor - Aggregation (overall view) - Integration - Instantaneousness

If the theory is true or not makes little difference. We can definitely see that certain functions are of one type and certain functions are of another type.

Accordingly, we identify a

CONVERGING INTELLIGENCE (associated with the Left Hemisphere) and a

DIVERGING INTELLIGENCE (associated with the Right Hemisphere).

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The **Converging Intelligence** (what traditionally we call "intelligence") is based on *deduction* and *syllogism*, and can be measured through IQ techniques.

The **Diverging Intelligence**, based on *induction* and *creativity*, can also be measured (although no official attempt has been made in this respect), through the assessment of 4 factors:

Elaboration (capacity of formulating and expressing ideas in proper, operational terms)

Fluidity (capacity of answering easily and smoothly specific questions)

Flexibility (capacity of generating ideas from different varieties of inputs and in different conceptual fields)

Innovation (capacity of developing innovative/novel ideas)

Western Education and Training have mostly focused on developing the Left Hemisphere and the associated Converging Intelligence.

But also the Diverging Intelligence may be developed. Everybody has a very personal cocktail of the 4 DI factors, hence the benefit of working creatively in team to generate ideas. However, DI can be developed at individual level with identical benefits.

To show how Diverging Intelligence intervenes in practical issues, consider the following problem:

"MECHANICAL TROUBLE"

You have just discovered you have a flat tyre. While changing the wheel, three of the 4 wheel nuts fall in a manhole. It's midnight, and you are in a desert road, far from anywhere. The area is not covered by mobile phone signal. What can you do?"

Converging Intelligence will do very little to help you - besides trying to grab the fallen nuts with all sorts of tricks, you won't come up with much. But Diverging Intelligence will.

One typical and possible solution to this problem is to "borrow" a wheel nut from two other wheels, and drive quietly home with three wheels fitted with 3 nuts instead of 4 (which is technically feasible).

Obviously, to be able to come up with such solution, you must "**diverge**" - you must "**break a cliché**", a commonplace. In fact, by breaking the cliché "car wheels must be fitted with 4 wheel nuts", you come up with the idea that can drive you home.

As you may notice from the example above, you have used "*intuition*", "*imagination*", "*aggregation*", "*instantaneousness*" (all features of Diverging Intelligence) to find ways of "breaking the commonplace" and come up with an idea that, **in hindsight**, appears perfectly logical and can be judged and accepted through traditional Converging Intelligence approaches.

Now, test your skills again, and using the typical DI tool of "breaking a cliché" try to find solutions to the following problem:

EXERCISE 1: THE TUNNEL

A heavy truck, fully loaded, is travelling towards a tunnel. Suddenly the driver realises that the load is too high to go through the tunnel. He brakes, and stops just in time. He gets off the cab, checks, measures, and realises that he won't go through for only 5 cm. excess height.

Many vehicles are already queuing behind (it's a one lane road), and he can only think of two solutions: offload partially the truck, which would take quite some time and would compel him to come back later and pick up the load left there on the roadside - or go back about 10 Km, and take another road with the disadvantage of having about 60 extra Km to drive (assuming he can reverse, which is now almost impossible having caused a queue at least 1 Km long....).

What else could he do?

You should be able to come up with a DI solution in less than 5 minutes. If you cannot, or if you are impatient, you can read a possible solution in the last section of these notes (Exercises' Solutions).

And now test your Diverging Intelligence skills with some more exercises. All exercises' solutions are in the last section of these notes.

EXERCISES DIVERGING INTELLIGENCE

EXERCISE 2: A CASUALTY

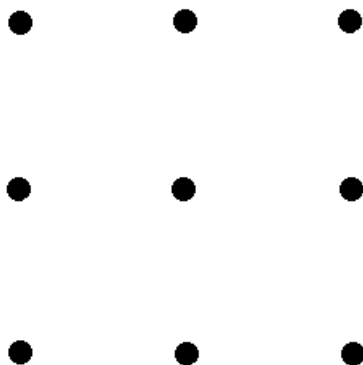
Father and son are driving to the sports ground to watch a soccer match. Unfortunately another vehicle does not respect a stop sign, and there is an accident. The father sustains only light abrasions, while his son gets seriously injured. An ambulance arrives in a matter of minutes and rushes the kid to hospital.

The casualty doctor on duty realizes the seriousness of the injuries and decides the kid must undergo urgently a surgical intervention. The surgeon arrives promptly in the operating theatre, examines the patient, and, turning pale, exclaims: "My Goodness, I cannot operate on him, he is my son..... !"

How do you explain this ? (1 minute)

EXERCISE 3: 9 DOTS

Draw 4 straight lines touching the 9 dots: without going over again and without taking off the pen from the paper. (2 minutes)



EXERCISE 4: 9 DOTS again

Let me push my luck and test further your DI skills. Can you do the same exercise with 3 lines only? And with one only???

If you have understood how to "break the cliché", you should be able to.

EXERCISE 5: BAD HABITS

A woman suddenly abandons her very sober habits and starts spending a lot of money. What could be the reasons of this sudden change ?

List down as many ideas as possible. (3 minutes)

There is no solution to this problem. You should come up with at least 5 ideas.

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EXERCISE 6: THE ROPES

Look at the drawing, and imagine to be the person standing in the room, who must grab both ropes hanging by the ceiling. The ropes are at such a distance however that, holding the one, and even with open arms, you cannot grab the other. The room is empty, and you have nothing but those ordinary things normally kept in the pocket. How to do it? (3 minutes)



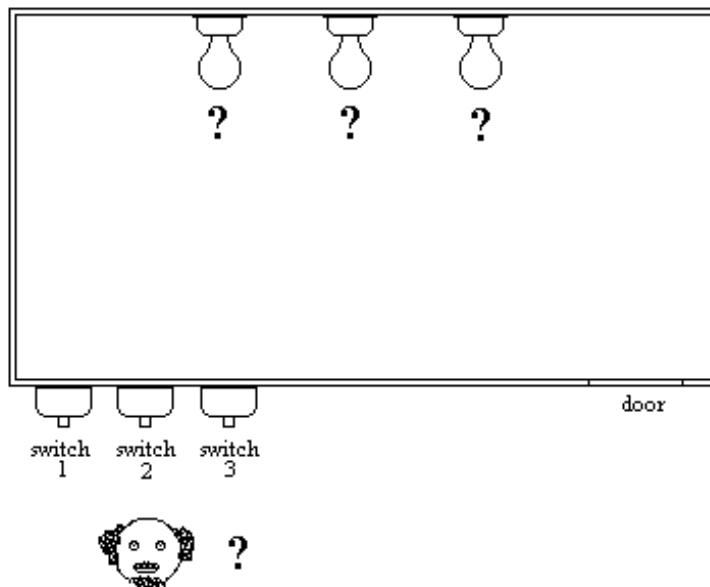
EXERCISE 7: THE 3 LIGHT BULBS

There is a room with three light bulbs inside.

Outside the room there are three switches, one for each bulb.
The only problem is that you do not know which switch lights up which bulb.

The room has no windows, the one door is closed, and does not let any light filter through.

The objective is to know which switch lights up each bulb.
You are allowed to get into the room ONCE only.



Hi! Are you back? How did you do? Good? Very well! Not so good? Don't worry. I have seen several chief executives who didn't know where to start from.....

Something I wish to mention at this stage is that through Diverging Intelligence it is possible to free our mind in *daydreaming* sessions (or “castle in the air” building) which, per se, are not of high value. But, as an exercise, this carries a tremendous value. It’s the starting point of that creative spark that makes the difference between mediocrity and brilliancy...

Some good daydreaming exercise may focus on pure science-fiction, or anti-conformist thinking.

Try to free your mind with these little exercises.

FREE YOUR MIND - ABANDON CONFORMIST THINKING
(INDIVIDUAL EXERCISES – no solution given)

Try to imagine all possible consequences of extraordinary (and very unlikely) events like the ones listed below:

1) Instead of having two eyes, human beings have four (two in front and two in the back)
[5 minutes –you should come up with at least 12 possible consequences]

2) Groceries are free of charge
[5 minutes –you should come up with at least 8 possible consequences]

3) Hands, considered “taboo”, cannot be used for anything (it is forbidden by law)
[5 minutes –you should come up with at least 15 possible consequences]

4) Human beings are hairless
[5 minutes –you should come up with at least 10 possible consequences]

5) Humans can fly
[5 minutes –you should come up with at least 15 possible consequences]

Are you back? How was that? Have you come up with some serious conclusion? Well, well, well...

So, let me stimulate you a bit further (yes, you are guessing right: more exercises! – but you don't have to do them right now, and this is a general rule – in fact I suggest you alternate studying the theory and some exercising, just to keep your mind alive....).

Here are some more Diverging Intelligence exercises.

DIVERGING INTELLIGENCE
INDIVIDUAL EXERCISES (no solution given)

List down all possible uses for: ordinary COINS (3 minutes – at least 10 possible uses)

List down all possible uses for: (Car & Motor bike) TYRES (3 minutes – at least 10 possible uses)

List down all possible uses for: BRICKS (3 minutes – at least 15 possible uses)

List down all possible uses for: PINS (3 minutes – at least 15 possible uses)

So, you can see that our mind is capable of producing intuitions, ideas, globalising visions.... This is normal – everybody can do a bit of this. Someone does it more and more effectively. Others less effectively. No problem.

Diverging Intelligence functions and abilities can be practised. Our brain is like a muscle, in this regard. The more we practise, the stronger it becomes.

But, creative thinking is not natural at all. I will come back to this point later on.

Let's try to define better what Creativity is. So far we have discussed about Imagination and about the human mind structure (Diverging and Converging Intelligence).

Let's go back to Imagination, a typical Diverging Intelligence function.

Well, the starting point is **Fantasy**. Normally, by Fantasy, we mean something "incredible", "out of this world", "unreal". We often say that children have a lot of Fantasy. That's true. Their mind is still unpolluted by education, it's still free. And, as such, it "fantasises", it "builds castles in the air".

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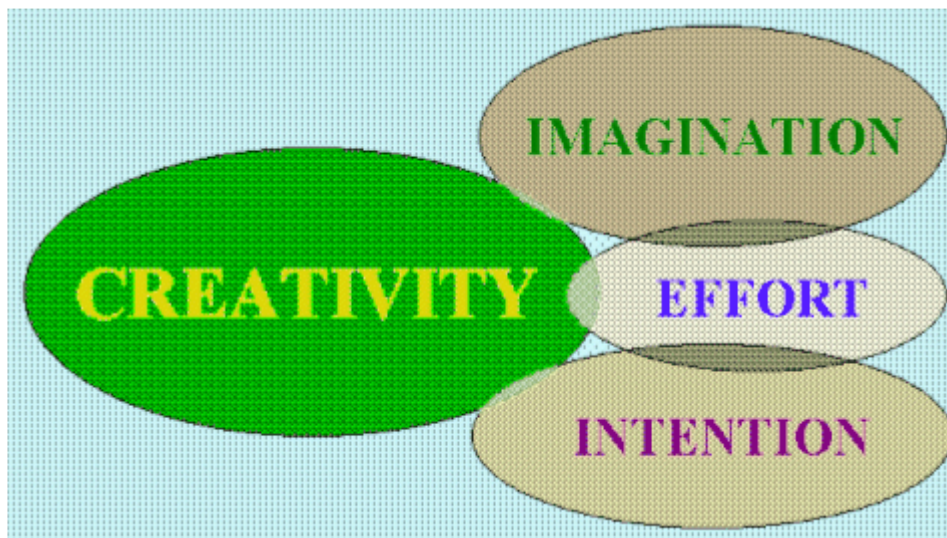
Close to Fantasy is **Daydreaming** (I just gave you some exercises on this topic). This can be done at any age.

Fantasy and Daydreaming are non-intentional at all. They just happen.

Imagination includes Fantasy and Daydreaming. But Imagination may become intentional. In other words, we can trigger our Imagination on purpose. At will. When this happens we call it **Creative Imagination**.

For instance, you have just used your Creative Imagination. When I invited you to solve some Diverging Intelligence Exercises. So, you have done it intentionally. You have used your Creative Imagination.

Creativity goes one step further. Creativity is



Yes, there is a new parameter: **effort**.

Effort because, as I said, Creative Imagination is not natural at all. Fantasy is. Daydreaming is. Creative Imagination is not. It requires an intention. Creative Thinking, or Creativity, is not: it requires an intention, an effort and something else: a **direction**.

Because we reserve to Creativity an upper level status. We state that

Creative Thinking is always directed to produce valuable results

So, solving a quiz, a puzzle or an enigma requires just Creative Imagination.

Solving effectively an Industrial problem – or trying to beat the world-hunger evil (just to make an example), requires Creative Thinking.

That's the difference. It's subtle, but it makes a difference.

Now, you will ask: "...why **effort**?...."

Because, as I told you, we are naturally inclined to go for simple solutions: obvious, spontaneous solutions.

Because our mind is rather lazy when it comes to think creatively.

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Because: why going into the trouble of squeezing our brain in search of innovative, “break-through” ideas, when everybody knows that hunger is caused by an economical disparity between developed and under-developed Countries and, as such, the only obvious solution is that developing Countries must be fed by developed Countries.... Period.

But is that true? Are we sure that’s the only or best solution? We do not know. And until we really go into the trouble of using intentionally our Creative Imagination to solve radically certain problems, we shall never know.

So, *effort*, *intention* and *direction* make the real difference between Creative Thinking and ordinary or creative Imagination.

I also mentioned **valuable results**. So, I am introducing the concept of **value**, of worthiness.

Why that?

Because results obtained through Creative Thinking must be worth something – otherwise we could just build castles in the air and be content with it....

No, in this world, in industry, in social groups, and also at individual level, we need value. Tangible or perceivable value. That makes our life, our enterprise and our world better.

Producing value is the ultimate essence and scope of Creative Thinking.

As I was saying earlier, Creativity is considered the ultimate resource of this millennium. It’s true.

As it is true that in this changed world we need more value.

It’s philosophy, perhaps, but that’s how things stand.

If you wish to know more about the modern philosophy of value you should refer to my other course “**Value Adding Management**” (coming soon).

End of the digression (digression??) – I shall come back to this core concept of value several times in this course.

Now: we have defined Creativity and Creative Thinking. I know you are anxious to go full immersion into that. But, before doing it, we need a bit more theory.

I have been presenting the 4 main functions of the human mind. Let’s focus on two of them:

- The **Imaginative** function – representation and elaboration of ideas – typical of Diverging Intelligence
- The **Ratiocinative** function - analysis, calculus, evaluation, judgement – typical of Converging Intelligence

And let’s focus on the **Judgement** function.

What do we mean by judgement? This function is concerned with “assessment”, “evaluation”, “criticism”. Every idea, every concept can be judged, assessed, evaluated, criticised, and so on.

We are very used to judgement. All our education is a hymn to judgement. We are judged by our parents since we are babies (“...this is good, you can do it – this is not good, you shouldn’t do it...”).

We are judged by our teachers in school (pass/no-pass – good/no-good).

We are judged in our work by our boss.

We judge people, ideas, behaviours, opinions. We accept or we reject. We like or we dislike.

Our brain is wired for judgement.

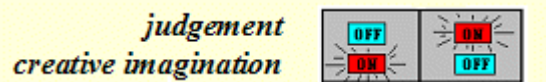
The reason why I bring up this point is because the judgement function (typical of the Converging Intelligence) does not support nor vitalise the Imaginative/Creative function (typical of the Diverging Intelligence).

In fact, in many occasions, the 2 functions may become antithetic.

For instance, in a creative session we may come up with some ideas. If the judgement function intervenes too early, it is possible that we condemn prematurely some or all of the produced ideas (...stupid... ..it won't work.... ..crazy.... .. impossible... ..cannot be done.... etc.).

Hence the simple conclusion

while in creative mode, judgement must be excluded



Switch off judgement when you create ideas. Switch it on at the end of the creative session to evaluate/assess ideas.

Judgement is enemy N. 1 when creating ideas.

When I was saying that Creativity requires effort, I was also referring to this very issue: we must do an effort to try not to judge ideas soon after producing them. It comes “spontaneous”. In fact, we have to do an effort to switch judgement off (until we learn to do it very naturally – this takes a bit of practise).

Please note. Judgement is strengthened mainly by 2 factors: education – age.

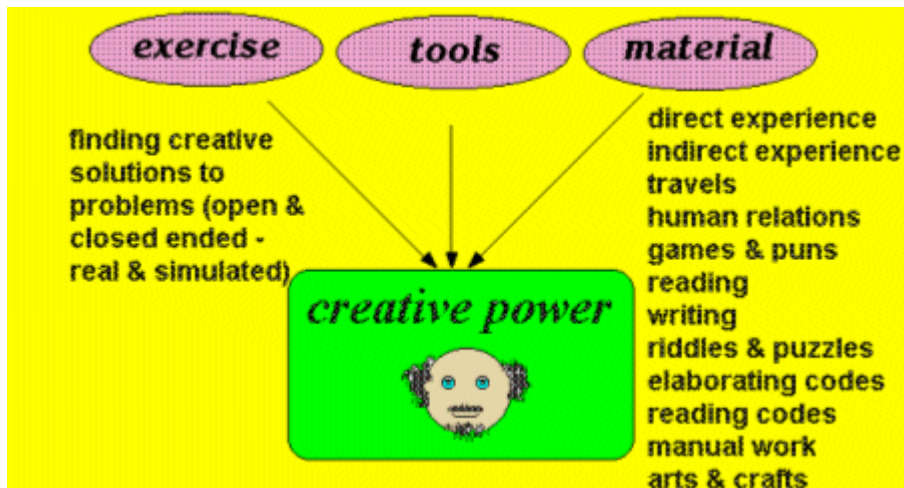
Creativity is strengthened by: encouragement – self-confidence – positive attitude – positive and receptive environment.

So it is important to approach any creative attempt with the right frame of mind: self-confidence arising from past, positive success is essential. Also the surrounding environment plays a determinant role: a person trying to contribute creatively to the solution of a problem, may be put off completely by friends, colleagues, superiors, etc. if they are more in a judgement mood than in a creative mood (I shall come back to this point a bit below).

It is also important to note that Creativity is weakened and also inhibited by: age – habits – education – tradition – conformism – conventionalism – discouragement – shyness – negatives (under any form) – modern, comfortable routine life.

With regard to this last factor: personally, I like islands. You know why? Because on islands I find lots of creative people. You know why? Because on an island life is different from mainland – it has always been different. Because of distances. Because things may become short or unavailable. Because of difficulties. Over the centuries, islanders have learnt to cope with all circumstances. This has required considerable creativity. The style has been inherited. And still today, islanders are generally more creative or open to creative thinking than mainland people. Need, generally, gives an impulse to creative thinking. But if we wait for need, it might be too late.

Creative Imagination may be practised and developed. How?

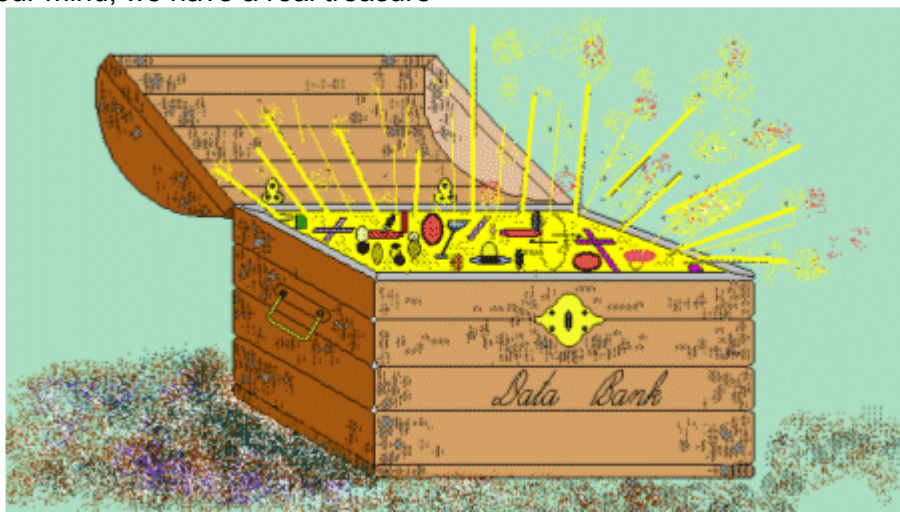


- **Exercise:** this is practical exercise – directed to finding solutions to problems, or searching for opportunities, or improving situations (see below under the respective sections)
- **Tools:** these includes all techniques available to stimulate creative imagination (see below)
- **Material:** any occasion of the day may represent useful material to stimulate and enrich creative imagination. It all depends on how we use the available material, and how we recall it (from our memory banks) what the time comes for a creative session.

So, the road to serious Creativity is a long but fascinating road. For sure, there must be an intention and a strong wish to be more creative for becoming such.

how to stimulate creative imagination to produce ideas

An idea is always produced by a human mind. Therefore an idea is related to the contents of that mind. And, in our mind, we have a real treasure



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The contents of our mind, stored in the mind's "data bank" (our memory) is a real, astonishing treasure.

What have we got there?

Lots and lots of stuff: memories, ideas, beliefs, opinions, songs....

Yes, has it ever happened to you that, while taking a shower or driving downtown a song (or a music, a tune...) comes all of a sudden to your mind? Perhaps a song that you didn't listen to for years and years? It happens to many. Because it's there, stored in the data banks of our mind. Or does it happen to you to remember, all of a sudden, a "flash" vision, perhaps of when you were a kid: a teacher that did something wrong to you, or your mother cooking a special food, or... It's all there: what you read, what you saw, what you listened to... is there, recorded in the hard disk of your mind. The most incredible hard disk ever invented, capable of storing million of Gigabytes of memories.

Why is this so important? Because, as you will see now, every idea comes out from that hard disk. Like the old song "surfaces" all of a sudden, or a flash clip of an old movie comes as a picture to your mind's TV screen, in the same way an idea may pop-up.

There is an important thing to mention, though: those "surfacing" visions or songs come up accidentally, nobody knows why and how. In the case of an idea, we are looking for ways and means to let it come up intentionally, at will!

But the process is the same: in some way or another, if we find ways of "**stirring up**" intentionally the contents of our mind, it is likely that ideas will pop up. So, instead of accidentally "spinning" the mind computer's hard disk, we are looking at methods and techniques to carry out an intentional spinning of that disk, in search for ideas we want to grab.

This is, in a nutshell, the mystery of creativity.

Let's go one step further. **What is**, again, **an idea?** An idea is nothing else than a *combined* picture in our mind's TV set.

Why combined? Because in our data banks there are million of *fragments* of ideas: small and big pictures, images, flashes – small and big concepts – words, sentences, expressions, mottos... - habits, traditions.... – etc. etc.

By combining – or re-combining – those fragments into a novel shape we produce novel ideas.

Why novel, why new?

Because in problem-solving, in opportunities searching, in improvement actions..... we need new ideas. The world is chock-a-block full of existing ideas, ideas that are known, ideas that are obvious.

We do not need any creative thinking to embrace those existing ideas. They are there, available.

It's just a matter of reading books, or searching the Internet, and we shall find existing ideas, ideas that have been produced by someone else. But we need creative thinking to come up with ideas that do not exist yet, that have not been produced yet (at least to the best of our knowledge).

Because novel ideas carry an enormous potential. Because they are (or may become) **valuable ideas**.

With this, I am not suggesting that existing ideas are garbage! Don't get me wrong!!

All I am saying is that you do not need any creative effort to find existing ideas, but just time and patience!

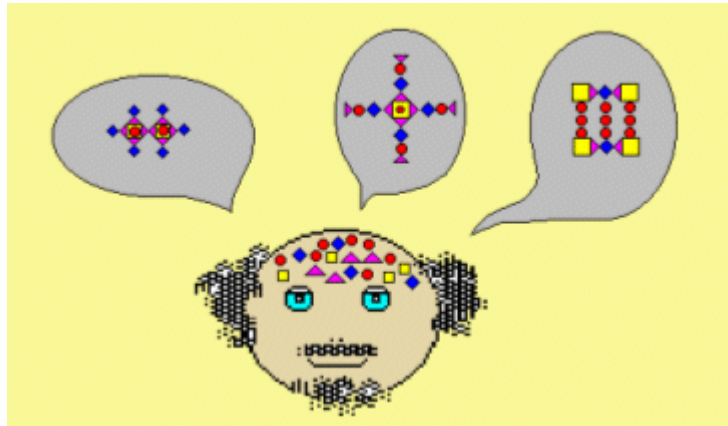
So, what is a new idea?

Look at the scheme below:

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an idea is the novel combination of fragments of elementary knowledge

So, in my mind and your mind there is an enormous vegetable “minestrone” soup: there are peas, and chick peas, and cauliflowers, and carrots, and potatoes... all chopped up in bits and pieces. When you stir the pot containing a minestrone soup, you may visualise “funny”, colourful shapes... In a certain area of the cooking pot there may be lots of carrots and few peas... in another area there may be some chick-peas with bits of cauliflower in between... shapes, colourful shapes... the same is with ideas.

As a basic example: by combining the elementary fragment of knowledge “lion” with another elementary fragment of knowledge “toy” with another elementary fragment of knowledge “sound” you may come up with the idea of a lion toy for children, that emits a sound (how about the “...rrroooooarr...” of a real lion?). If you then add the elementary fragment “button”, plus the fragment “battery” plus the fragment “speaker” plus.... You may come up with a novel toy for children, in the shape of a lion, that rrooaarrs when the child presses a button (or pulls the tail??) – the sound comes from an internal speaker, powered by a battery.....

OK?

So: intentional creativity is equivalent to an intentional stirring of the mind’s contents, in search for an idea in a certain direction. That idea should be valuable.

And how do we stir-up our mind?

That’s where the **intention** and the **effort** (or part of it) come into the scene.

Since our mind only “spins” accidentally (by its own nature) – we must find ways of spinning it intentionally.

For that we need **tools**.

techniques to stimulate the production of ideas

Let’s start with the oldest (50 years - but still rather valid) technique:

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BRAINSTORMING

You may easily imagine why this name: not just a stirring-up, but a real storm in our brain!

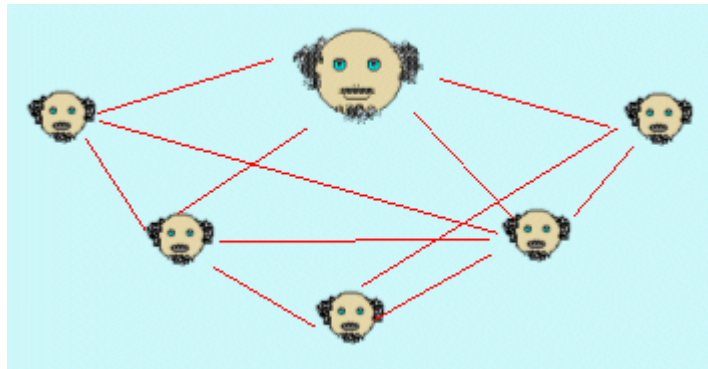
It was invented in USA during the last world-war, to produce ideas that would win the war. It is still used today – for instance, it's widely used in Advertising Agencies to create advertising ideas.

This is a technique normally utilised in team. But it could be used also individually (definitely with less effectiveness).

Definition of brainstorming:

creative session, aiming at producing a list of ideas generally related to the solution of a problem – the ideas are subsequently elaborated, developed and finally evaluated

The mechanism of brainstorming:



Focusing on the issue under consideration, each member of the team may express ideas – each idea reaches all other members of the team, causing a “spinning” in their mind – this originates new ideas – that, in turn, reach all members – again causing another spinning – and so on, in a sort of “**chain reaction**”.

Ideas may be elaborated, developed, combined and associated – but not criticised (judgement off).

Here are the **main rules of Brainstorming**:

- Criticism of ideas absolutely forbidden (**judgement “off”**) – ideas will be evaluated, assessed and judged in deferred mode, at the end of the brainstorming session.
- **Free-Wheeling** welcome and encouraged. Ideas lead to other ideas, in a sort of “ping-pong” game played by many players simultaneously. This brings up a considerable number of ideas.
- **Combination** and **Association** of ideas welcome. 2 or more ideas combined together may originate other, novel ideas.
- The target is “**quantity**” of ideas, rather than “quality”. The secret hope of a brainstorming session is that quality (goodness of ideas) will originate from a large number of ideas. This is a statistical approach, not supported by many gurus of Creative Thinking (Edward de Bono to begin with). And yet, traditional brainstorming may produce valid results.

END OF PREVIEW

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MY PHILOSOPHY, MY VISION, MY MISSION

I believe in Value and Lean.

I believe that in many decades of industrialisation we have somehow lost a key word and a key concept: value - value that Enterprises offer to Clients - value generated by productive processes - value produced by managers and employees in their daily confrontation with reality - value produced by plant, equipment, machines, and technology - value brought in by suppliers - value inherent in people know-how - value generated by continuous improvement.....

Today, World Class Performers are re-discovering the vital importance of this key concept, and build enterprises engineered to produce pure, abundant value. World Class Performers are Enterprises that build their competitiveness on the value parameter: their processes are waste-less, and under continuous improvement - their people understand value, and are extremely critical about the way they produce it - their plant and their technology are managed to generate extremely high levels of output value - customers' satisfaction is their primary target, and they achieve it by offering customers an ever increasing level of value - suppliers and sub-suppliers, clients and clients of clients become integral part of a "value-chain" ending only at end-user level - their vision, their mission, their strategies, their targets, their industrial culture, their corporate communication, their organisational structure..... are all focusing on this very, primary concept: value.

I believe that, in a rapidly changing world, featuring globalisation and vanishing borders, all Enterprises, of any size, must and can, today, perform as the "top of the class" by adopting the Value Adding Management discipline as their guiding light.

My philosophy rotates around the key concept of value, and my training and consulting services are structured to enable Small and Medium size Enterprises to achieve higher levels of performance by re-discovering "value" as key parameter for competitiveness and success.

I believe in Integration.

I believe that as specialisation has been the key feature of this century's industry, integration is going to be the key feature of years 2000's industry.

Industry has been built around the concept of "specialisation" from well over a century: processes, products, services, jobs, machine functions, etc. show, even today, a high degree of specialisation. Associated to specialisation, however, there is another feature, which is "fragmentation": fragmentation of processes, of work, of operations, of activities, of tasks.....

I believe that specialisation and fragmentation are enemies number one when aiming at high levels of performance. I believe that only integration sets the path to excellence and real industrial performance.

Integration is associated with flexibility, adaptability, government and control of change: all important features in our industrial world of today and tomorrow. Integration is associated with overall view, overall control, and overall, holistic approach to performance: for too long many Enterprises, especially of small and medium size, have tried to achieve competitiveness and performance by embracing the "fashion" management discipline of the time, be it Quality Assurance, Total Quality Management, Zero Defects, Productivity Improvement, Process Improvement and Management.... or effective Management techniques, or Leadership techniques, or a Continuous Improvement approach, or Management by Objectives..... and even One-Minute Management..... trusting they had come across the truth and the recipe to success, to discover eventually, in many cases, that the improvement in performance was not real, or consistent, or stable.....

I believe that real improvement in performance can only be obtained with an integrated approach, focusing on the key concept of "value" as guiding light, and powered by the use of a number of appropriate disciplines "in consociation" and simultaneous deployment: like to say that targeting at quality improvement without considering simultaneously the productivity aspect is not getting to real improvement, and it has never generated real improvement, because quality and productivity are always the two sides of the same medal - and vice-versa - like to say that focusing on process improvement or process re-engineering without considering simultaneously the primary importance of getting employees highly involved and without the simultaneous deployment of adequate technology-performance techniques can only bring very marginal results - like to say that going for a Kaizen style of continuous improvement without knowing priorities and targets that in certain instances only adequate Benchmarking can provide may fail, as it has failed - and so on: there are many more examples of possible failures due to lack of integration or to excessive focus on an individual, specialised technique.....

Only an integrated view (".....see the tree, not the leaves....." or, referring to my New Performing Systems architectural structure, ".....see the temple, not only the pillars....") can produce valid, high level results.

Because when, and only when, people, machines, methods, techniques and disciplines become an harmonic, integrated combination, in symbiosis one another, can an Enterprise aim at superior performance.

This "integration" key feature, besides, should not only be the task of top management of an Enterprise, but should, to my opinion, be a feature of the Enterprise as a whole, as it may be noticed in World Class Performers: I believe that all minds in an high performing Enterprise must be made aware of the strategic importance of "integration" and addressed to that very direction. I believe that processes must be integrated, work must be integrated (and not fragmented), and approaches must be integrated. Because only this way people may achieve real job satisfaction.

I believe in Simplicity.

I believe that being in business, performing well as an Enterprise, manufacturing products or providing services, is and should be simple, and, most of all, be kept simple, especially in a world in which a predominant feature is complexity. It is my view that if any process, situation, or problem is too complex to be understood, solved or managed, there is something very wrong behind it, and, rather than tackling complexity, complexity should be eliminated to begin with.

As I notice that, in many decades of industrialisation, things have gone more and more complex (I refer to: complex, fragmented processes - pyramidal, bureaucratic, complex, split-function organisational structures - processes built on waste rather than around value - complex management practices - complexity of communication - complex and even distorted thinking, at all levels - etc.), I believe that time has come to bring things back to basics, back to elementary shapes, back to reality, back to simplicity, back to value.

I believe that World Class Performers have well understood this basic concept, and I believe that Enterprises aiming at excellence or superior status must, first of all, re-simplify and make very practical their dynamics, their processes, and their approaches.

I often follow the trend and offer, to participants to my courses, the latest techniques in: communication - leadership - team building - self-improvement - etc.

However I believe that practicality and simplicity are even more essential than techniques. I believe that what counts is the ability to simplify processes and to make them more linear, more human, more understandable. I believe that what is important is to assure value generation at every step of any process. I believe that is extremely important to give people well defined responsibilities, rather than trying to inject, with superior leadership and excellent communication abilities, doses of motivation that cannot get anywhere, just because the very task or the very activity is de-motivating and frustrating in itself.

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I believe that accountability for the output of a well defined process gives more job satisfaction and more motivation than a salary increase or a performance bonus. I believe that people must return down to earth to simple, basic concepts of daily value generation through hard effort and acceptance of challenges. I believe that brain laziness is a public enemy to be fought very fiercely. And I believe that people must be responsible for providing their own motivation, their own security, their own quality of life.

I believe in Creativity.

I believe that Creativity (and not Products, Services, Finance, Technology, Management abilities.....) is and is going to be the only and real factor of competitiveness in the next millennium. As Creativity is the common denominator of all other factors of competitiveness. I believe that Creativity is essential for the Enterprise aiming at high levels of performance: Creativity is very important in problem solving, in decision-making, in planning, in team-work, in searching and generating opportunities, in continuous improvement practices..... Creativity is the ultimate secret for achieving high levels of Quality, Productivity and Customers' Satisfaction. Creativity is the spark that makes the difference between Enterprise's excellence or mediocrity.

I believe in the very high power of Creativity, channelled to the generation of value by integration-capable minds, and I stress its vital importance in all my consulting and training activities.

I believe in People.

And I believe that people is the most important resource of any Enterprise, as people may make the difference between its failure or its success.

I believe that people can improve considerably themselves, their performance and the performance of their Enterprise, and that a chance to generate such improvements must be given to people. I believe that it is Top Management primary responsibility to create an environment in which people are given the possibility of performing at high levels. And I believe that this can be obtained by critically (re)designing processes in which people work, and in which people are empowered to generate high levels of value through their efforts, their creativity, their commitment, and their thorough understanding of the process/es to which they are assigned and for which they have high levels of responsibility and accountability. I also believe that responsibility and accountability for a process are a major pre-requisite for people to obtain high levels of job satisfaction.

I believe that people work must be integrated and not fragmented, and that specialisation must gradually make space to multi-skill and multi-function situations.

And I believe that only this way people may re-gain that professional dignity somehow lost in many decades of specialisation and fragmentation.

I believe that work must be a very pleasant experience for all employees, a gymnasium in which people can practise, test and prove themselves, set challenges, improve, excel and be highly satisfied. And I believe that this is easily achievable.

It is my commitment to stress these vital issues in my consulting and training activities, and to convey these priority messages to people in Industry, at all levels.

The above is my vision and my operational philosophy.

It is my mission, and my thorough commitment, to convey its basic principles to Enterprises and people in Enterprises, with the aim of achieving higher and higher levels of performance.

It is my commitment to do my very best, with honesty and professionalism, to enable Enterprises of small and medium sizes (and as such within my reach and within my own personal capacity and abilities) to understand and make operational the best, up-to-date practices that lead to World Class performance.

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Finally, it is my pleasure to commit myself to continuous learning, continuous self-improvement, and, wherever necessary, to continuous change, with humility, and with consciousness of my limited knowledge, always insufficient and always perfectible. Along these lines, it is also my commitment and personal pleasure to get in deep contact with industrial realities of many Countries, and with diversified cultures, to continuous personal and professional enrichment, and to the benefit of my Clients, of the Participants to my training courses, and of all the individuals I will have the opportunity and the joy to get in touch with in the course of my life.

Carlo Scodanibbio

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Carlo Scodanibbio, born in Macerata (Italy) in 1944, holds an Italian doctor degree in Electrical Engineering (Politecnico di Milano - 1970).

He has over 38 years of experience in Plant Engineering, Project Engineering and Project Management, as well as Industrial Engineering and Operations Management.

Free-lance Consultant since 1979, he has worked in a wide spectrum of companies and industries in many countries (Southern Africa - Italy - Cape Verde - Romania - Malta - Cyprus - Lebanon - Mauritius - Malaysia - Kenya - India - Saudi Arabia), and operates as an Independent Professional Consultant and Human Resources Trainer to industry.

His area of intervention is: World Class Performance for Small and Medium Enterprises in the Project, Manufacturing, and Service sectors.

His favourite area of action is: the "lean" area.

He has co-operated, inter-alia, with the Cyprus Chamber of Commerce, the Cyprus Productivity Centre, the Malta Federation of Industry, the Mauritius Employers' Federation, the Romanian Paper Industry Association, the United Nations Industrial Development Organisation and the University of Cape Town.

His courses and seminars, conducted in English, Italian and French, have been attended by well over 13.000 Entrepreneurs, Managers, Supervisors and Workers. They feature a very high level of interaction, and are rich in simulations, exercising and real case studies. The approach is invariably "hands-on" and addressed to immediate, practical application.

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