CREATIVITY FOR BUSINESS INTELLIGENCE

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ABSTRACT

What does business intelligence mean? It seems to us the emotionally coherent use of a skills set in different domains and in different accomplishments for a objectives diversity to conceptualize and pass on to the materially realizable the process of interpreting, analyzing, modifying, and innovating, intentionally extracted business data in order to support decision support systems, generating and sharing knowledge. Understanding that the main attitude that underlies this process is the creativity, we carried out experience with teams of a postgraduate course in Business Intelligence, which underpinned in a process of this nature the conception of a brand now expanding and recognized, of which we want to bear witness here. We conclude, that this experience is positive to exercise business intelligence.

Keywords: creativity; teams; conflicts; performance

OBJECTIVES AND PREOCCUPATIONS

Creativity for business intelligence (Negash, & Gray, 2008) means to use us creativity potential references and work with teams in an original form with a group vision, mostly testing the creative potential and ideas and creative processes. To develop these processes in practice we need to apply the creative process to entrepreneurship teams (Harper, 2008) and making tests, namely about conflicts management (Peng, & Silva, 2018).

The globalization triggered the teamwork in a necessary reality on organizations, where everything builds something based on teamwork, and involved the employees in their organizations, where they carry out the work to be done and empowered (Mockaitis, Zander, & De Cieri, 2018).

So business intelligence wants creative people that want to be more creative, the kind of people that wants success and considers it as the most important value of their lives and creativity is the skill key required to success (Deuze, 2018).

A business intelligence person must be creative, search for new solutions (*original*) (Richards, 2018), thinking change frequently and searching how to adapt to the situations (*flexible*) (Kenett, Medaglia, Beaty, Chen, Betzel, Thompson -Schill, & Qiu, 2018), and word ability to express (*flowable*) (Dwight Tse, Fung, Nakamura & Csikszentmihalyi 2018) and, especially creative minded (Mastria, Agnoli, Zanon, Lubart, & Corazza, 2018).

RESEARCH METHODS

Thus, it's emergent to want to know what about the business intelligent person creative potential (Diedrich, Jauk, Silvia, Gredlein, Neubauer, & Benedek, 2018), this must begins on schools (Homayoun & Henriksen 2018) teaching and training students early to get the best results as possible. Observing genetically these potential (Herrmann, 1991) we can aim positive outcomes (Kaufman, 2018) one of it about describes the creative style (Reiter-Palmon, & Kaufman, 2018). In the genetic observation, the creativity depends on a four egos disposition on the brain hemispheres. If we use the left hemisphere we are in an analytic function. In this situation we represent the past, where we have motor control, detail worry, factuality, objectivity, results already, so we are rational analysing everything, quantifying, and be logic, critic, and realistic, liking money and numbers, knowing how the things work avoiding measures, so we are rational. From this point, we control the right hand, being conscious, establishing procedures, making the things happen, very reliable and organizational, tidy, punctual, and planner, so we are cautious. If we use the right hemisphere we are in creative function. In this situation we are representing the future, where we are a naysayer, generalist, and intuitive, allowed, thinking with subjectivity and thinking laterally, using diffuse logic, in short being creative. When we synthesize, riddle, imagine, and speculated, we take risks and break the conventions, being impetuous, so we are experimental. From this point, we control the left hand, being sensitive with the others, liking surprises and liking teaching, touching and supporting people, using emotional expressions and talks a lot, being sensitive.

After a search for the potential, we search for a creative style (Wixom 2004) who that means if we ve four kinds of personality that will help the creative process, they are:

The disseminator (Taylor, 2013). A person that conceal others to promote the creativity finding and establishes bridges between them in order to an action planning about what ll need to create.

The forager (Taylor, 2013). A person who searches for opportunities based on facts, different perspectives, and imagine many possibilities and opportunities.

The synthesiser (Taylor, 2013). A person who transform concepts into practical solutions and select the best solutions to problems focusing on specific problems and evaluate the ideas and planning what to do with them.

The explorer (Taylor, 2013). A person who explores new ideas and opportunities and enjoys transform them in a problem-solving scenario.

So after people know themselves better their creative potential and personality they ll choose a technique about the creative processes that we present for they`ll use. Thus, we obtained, with the postgraduation course teams, the following results:

Table 1 – Teams creative technique options

Techniques	Votes
Brainstorming (Paulus, & Dzindolet, 1993).	14
Mind Mapping (Mento, Martinelli & Jones, 1999).	6
A creative process (Mednick, 1962).	3
Team debate (Romme, 1996).	2
Six Thinking Hats (Göçmen, & Coşkun, 2019)	1
Get Young People involved (Dovey-Pearce, Walker, Fairgrieve, Parker, & Rapley, 2019).	1
Open Culture of debate (Glaveanu, Hanchett Hanson, Baer, Barbot, Clapp, Corazza, Sternberg, 2019).	1
Total	28

TECHNIQUE DEVELOPMENT AND PROCESS

People begin with reflection rules where anyone suggests the greatest possible number of unique ideas that can function as solutions, as well as stimulate the ideas of others (Ulrich Bröckling 2006). The reflection process goes through phases. Both phases in which there are many ideas like other stages come the ideas come slowly. When the process slows down, it is a good time to review the ideas and work them, as it follows:

Encourage your colleagues to say all sorts of ideas - the more daring and radical best.

Do not judge ideas.

Quantity is more important than quality.

Pay attention to the ideas that arise and build from these other.

Any idea is valid, even if it seems silly, impossible or irrelevant.

Do not censor or criticize their own ideas or the ideas of others.

The group reflection ... can last from 5 minutes to 2 hours, although most of the groups working on a range of 5-15 minutes. The group must be a qualified group and must act with the following conditions:

Make important decisions.

Interviewing and selecting leaders.

Invite new members to join the team, removing those who do not perform well.

Conceive and carry a lot of their own training.

Distribute and receive rewards as a team.

So this group undertake the following actions:

Grant power and authority to make decisions independently.

Allow teams to take far-reaching decisions, not cosmetic measures.

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Allowing the team to choose their leaders.

Allow the team to determine their own goals and commitments.

Make sure that all have an influence on decision making and that meet.

Exclude causes of conflicts:

Recognize and resolve personality conflicts.

Fighting territorial conflicts and the resistance of middle management when and where to find.

Unify the views of management and team members.

Do what you can to minimize the stress of members.

Change the factors that interfere with efficiency.

Evidence that ALL IS MORE IMPORTANT THAN THE PARTIES - nobody is better than nobody, and nobody is able to achieve the targets alone.

So, we as a quality group members must be able to improve our behaviour in light of the situation and perceive changes in other behavioural detection, who that means know our personality into the group, which depends from our automotivation and relationship with the others, translating five personality types (Luft, 1961).

With higher automotivation and lower relationship with others, we have a competitor. His motivation lies on bottom line results. How much? How quick? Let's get going. This kind of person has a fear of losing control and waisting time. He s a self-assured person, direct, forceful, and impatient, cut to the chase, and focusing on results and instant feedback.

With lower automotivation and lower relationship with others, we have an avoider. It s compliant and conscientious (thinker), which motivation is concerned about accuracy and details. He fears criticism, conflicts, and being wrong, serious, analytical, questioner, being sceptical, cautious and reflective, enjoying independence. Likes to do many questions and very attentive to details, supporting evidence and works on silence asking for let him alone for thinking.

With higher automotivation and higher relationship with others, we have a sharer. This personality is an influencer (socializer), which motivation consists of flattering, optimism and more emotionally intelligent. He fears to be rejected, only. He has an animated behaviour, talkative and open, charming user and persuasive, showing emotions. He gives to others positive reinforcements, smiles, making fun and tell stories about emotions.

With lower automotivation and higher relationship with the others, we are in the presence of an accommodated. He s cooperative and sincere but needs to like you to work with you. The others need to work first. He fears the change (not early adopters) and is careful, slow, calm, patient, relaxed, and humble. Don`t like to be rushed and dependable. E takes genuine interests in people, mapping out each step, being empathetic and likeable.

After this, the constituted teams begin to work.

RESEARCH SAMPLE TO APPLICATE CREATIVITY IN BUSINESS INTELLIGENCE

The sample is constituted by 17 ex-students and collaborators of a high tech multinational and all attended a Business Intelligence Master Course. 11 are males, and 6 are females. For developing and materialize an idea the sample was divided into two groups and each one had contributed to present a product or service based on business intelligence. They have begun with a warm exercise called "The Cow" (Osterwalder, Pigueur, 2011) where they complied with the following instructions:

Outline three different business models, all using a cow.

Start by defining some characteristics of the cow (produces milk like all day, moos, etc..).

Use these features to produce an innovative business model based on a cow.

Note: You have 3 minutes.

After essay this, they are proposed to fulfil 12 tasks which we now describe as:

Task I - Pick up an exercise sheet, preferably lined up and respond in detail to the following questions:

What kind of idea am I going to dedicate myself to?

To whom am I going to show this idea? Who will be my stakeholders/clients?

What aspects do I have to take into account when locating the idea?

What ideas are going on in the market that can be my competitors?

What advantages can I present that differentiate me from existing ideas?

What resources will I need to get the prototype up and running?

When will the ideas for prototype creation be put into practice?

What skills will be needed to create the prototype?

Task II – The group must choose 6 professional skills (what each member can do in professional terms) and 6 personal skills (what each member know to do not directly linked to a professional competence) and 6 things that all like to do and that really is very good.

Task III - Choosecompetence from the previous exercise and develop it is possible. alternatives until they come up with an idea of what we want to do and put into practice. After the individual reflection asks group members opinions and more possibilities:

How to convert it into products for individuals? What particulars?

How to convert it into business services? Which companies?

How to convert it into products for companies? Which companies?

How to convert it into services for individuals? What particulars?

Task IV - Use lateral thinking (De Bono, 1990):

Launch a provocative idea to work.

Run away from what is given as purchased.

They reverse the orientation that things normally have.

Exaggerate common situations.

Distort what is the norm.

Relate two words.

Task V - Innovate, change, or vary, what they idealized or will idealize is the existing product/service or processes (SCAMPER Methodology) (Moreno, Yang, Hernandez, & Wood, 2014):

S - Replace. What elements can be substituted?

C - Match. What would happen if we combined this or something else?

A-Amplify. What elements could be amplified from other products or weather?

M- Minimize.What is not needed in this product and what can be removed to make it more light, smaller, more attractive, anyway, better?

P- Propose for other uses. What other uses/uses can I give you?

E- To eliminate. What elements can be eliminated?

R- Reorder / Reorder. How can I reorganize?

Task VI - Each colour represents a hat, and each group should use all colours at different times for all points of view, the discussion is made in the colour order of the hats (De Bono, 1990):

Yellow hat – This is an attitude that moves of ahead the situation with positive hope.

Green hat – A creative lateral thinker.

White hat – Just the facts, please.

Blue hat – This is the control hat.

Red Hat – Wearing this that permits the thinker to say, "This is sawed I feel about the matter.

Black hat – specifically concerned with negative assessment.

Task VII - Determine the profile of the people who will be potential users of our product or service:

Who are?
Where are?
Why buy?
How much-added value do you expect?
What are your whims?
Task VIII - Determine competitors' profile.
Direct Competition:
Who offers the same product or service like us?
What barriers can and do affect us directly?
What are the weaknesses of my potential competitors?
Where can I find more information about my possible competitors?
Indirect Competition:
What are the companies that offer different products or services for the same purpose?
What barriers can exist that affect us indirectly?
Task IX - Determine the resources needed to materialize your idea.
Build your contacts network.
The people to whom you can associate to achieve your goal.
Task X - Make a synthesis to help you better define the strategies for creating a good or service.
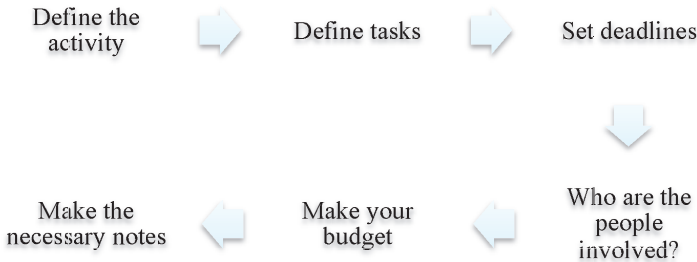
Fig. 1
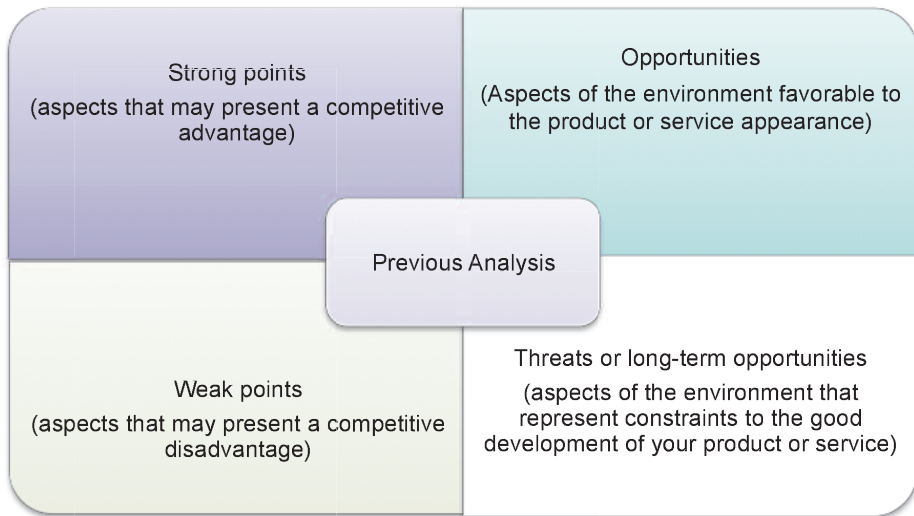
Task XI - From here, create your product or service.
Task XII - Prepare the action plan of your product or service.

Fig. 2

RESULTS, DISCUSSION, AND CONTRIBUTION

As a result, the group conceived "The Smarter Fest Project" a mobile application dedicated to turning better the access to Tomar Tray Feast (the main popular event into the city of Tomar, Portugal) by the people who go to participate in it. The same application was controlled by two operations intelligent centres who helped the authorities to manage the protection and help means and also the crowd's mobility. At the same time helped the public to know the fest programme, parking places localization, and accessibilities to the city, facilitating the security forces action either. This reveals that through a very specific creative process, team works can orient themselves in a qualitatively high way in the design and development projects without requiring high previous talent and competencies inherent to it. However, this revealed synergy develops the attitude of creativity and such competencies and talent can reveal themselves and become a competitive advantage both individually and in groups. The fact that they designed a project that innovated an event of enormous impact in the city, is the unequivocal proof that cities can re-establish themselves by improving the quality of life of their citizens and the urban network that characterizes them, thus making a huge contribution the use of business intelligence.

CONCLUSIONS AND FUTURE TRENDS

Using creativity in business intelligence permitted, in this case, a rediscovery of a small city and create success points in its culture, using innovative thinking for a change imagining a city. This was possible by embedding a creative culture in a business intelligence course highlighting them members personal qualities reinforced the culture obtaining a strong identity. Facilities, urban spaces, networking and associative structures, was innovated by a group of students who committed themselves to think laterally a reality. They experience proved the use of business intelligence. We believe that, in the future, cities will rethink themselves, the advent of artificial intelligence system, bring to our brain many forms to answer to diverse challenges and problems establishing a relationship between ourselves and the environment, in an exercise of making the business intelligence a reality more and more evident in all human life decisions. We will be getting smarter, more human, more emotional, enhancing the creative attitude.

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