VUCA: A MANAGEMENT TOOL FOR DEALING WITH CHALLENGES IN CHANGING ENVIRONMENTS

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ABSTRACT

This article begins by commenting briefly on several characteristics (order, disorder, and movement) of the current pandemic environment in which we live and work. It seems clear that organizations need tools to help cope with challenges from our changing environment; one tool which seems likely to be useful is VUCA analysis. The origins of VUCA analysis and definitions of its four components (Volatility, Uncertainty, Complexity, and Ambiguity) are discussed. After describing a process for doing VUCA analysis as suggested by Meyer (2019), the article provides several comments and/or examples offered by executives and/or analysts regarding VUCA analyses and their usefulness, based on the use of primary and secondary sources. Concluding comments by the authors touch upon some of the implications that are believed to emerge from our examination of this topic.

Keywords: VUCA, target market, volatility, uncertainty, complexity, ambiguity

INTRODUCTION

It has become especially clear this year that we live in a world in motion, where expressions of order and disorder, organization, and disorganization, predictable and unpredictable, all co-exist. The world has changed; in this world, the consideration of movement and its fluctuations (i.e., variability) prevails over that of permanence, structures, and organizations. The characteristics of the current environment comprise the following: order, disorder, and movement. In this world, chaos not only exists but is in fact ever-present, and organizations need tools to deal with considerations including the following:

1) Order and disorder do not separate but occur in association through complex and sometimes mysterious relationships.
2) Uncertainty and complexity have increased and force organizations to grope forward.
3) The multiplicity of variables and their compound interactions are always uncertain; reducing them for analysis is difficult.

VUCA ANALYSIS: A MANAGEMENT TOOL SUITED TO THE PANDEMIC ENVIRONMENT

Based on management research by Warren Bennis and Bert Nanus in *Leaders: The Strategies for Taking Charge,* (1985), the U.S. Army War College (USAWC) introduced the concept of VUCA as an acronym to define strategic leadership as occurring "within a volatile uncertain, complex and ambiguous global environment, marked by possibilities and opportunities" (Barber, 1992, p. 8). Since then, the idea of VUCA had been applied to a variety of organizations including educational institutions and for-profit corporations (Systems Innovation, 2019).

In an article posted on the Forbes website, Kraaijenbrink (2018) provides the following concise definitions of the four key variables in the VUCA model:

Volatility: Volatility refers to the speed of change in an industry, market, or the world in general. It is associated with fluctuations in demand, turbulence, and short time to markets and it is well-documented in the literature on industry dynamism. The more volatile the world is, the more and faster things change.

Uncertainty: Uncertainty refers to the extent to which we can confidently predict the future. Part of uncertainty is perceived and associated with people's inability to understand what is going on. Uncertainty, though, is also a more objective characteristic of an environment. Truly uncertain environments are those that do not allow any prediction, not even on a statistical basis. The more uncertain the world is, the harder it is to predict.

Complexity: Complexity refers to the number of factors that we need to consider, their variety, and the relationships between them. The more factors, the greater their variety and the more they are interconnected, the more complex an environment is. Under high complexity, it is impossible to fully analyze the environment and come to rational conclusions. The more complex the world is, the harder it is to analyze.

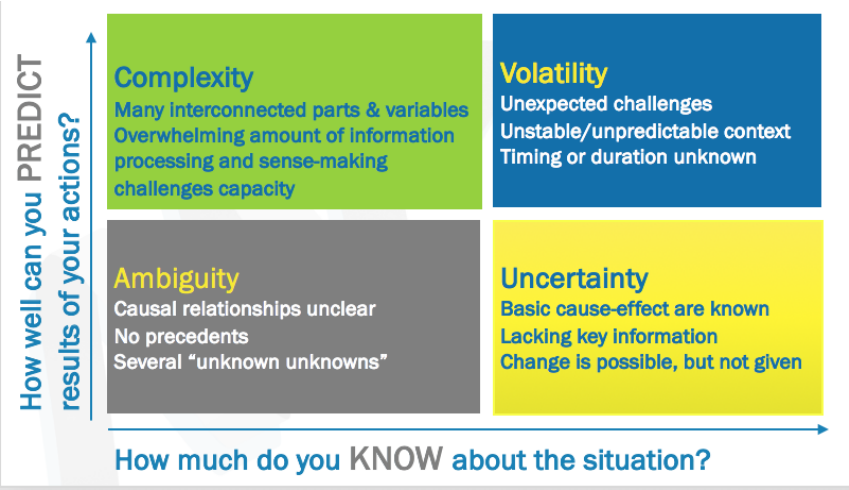
Ambiguity: Ambiguity is a lack of clarity about how to interpret something. A situation is ambiguous when information is incomplete, contradicting or too inaccurate to draw clear conclusions. More generally it refers to fuzziness and vagueness in ideas and terminology. The more ambiguous the world is, the harder it is to interpret (Kraaijenbrink, 2018).

After providing the above definitions, Kraaijenbrink (2018) goes on to observe that "in practice, the four terms are related. The more complex and volatile an industry is, the harder it is to predict and therefore more uncertain it will be. Yet, all four represent distinct elements that make our environment-the world, a market, an industry-harder to grasp and control.

METHODOLOGY: MEYER'S VUCA ANALYSIS

While there are undoubtedly several different approaches to conducting a VUCA analysis, one suggested by Meyer (2019) seems especially straightforward and builds on the following graphic from a *Harvard Business Review* article by Bennett and Lemoine (2014). As indicated, the vertical axis of this 2X2 contingency table measures the response to: "how well can you predict the results of your actions?" whereas the horizontal axis measures the response to: "how much do you know about the situation?"

FIGURE 1
The VUCA Model



Source: Bennett & Lemoine (2014).

After indicating that the next step in conducting a VUCA analysis is "to identify which of the (above) four characteristics are most relevant to your current situation" (Meyer, 2019, p.2), the author identifies various challenges associated with each VUCA element. Subsequently, she

indicates that the next step in conducting a VUCA analysis is the identification of characteristics most closely related to the present situation (Meyer, 2019). Following this process, there is a need to determine challenges associated with each VUCA element. Some issues are likely to cause ambiguity such as when the timeframe and impact of the current conditions are unknown. Other issues resulting in ambiguity are moving into a new market, launching a new product, creating a new strategic alliance, expanding beyond your core competencies and experiencing a change in leadership or the organization (Meyer, 2019).

Issues likely to create complexity include: 1) Doing business in global markets; 2) Having multiple stakeholders with competing or shifting priorities; 3) Having multiple brands, products, supply chains and distribution channels, and whatever is going on in the current environment which will greatly impact your entire business eco-system (Meyer, 2019).

Regarding issues likely to create uncertainty, the following are identified: Competition is launching a new product/service and the impact on the market not known, uncertain impact on the availability of key resources including capital (and/or) skills (and/or) knowledge and talent, past supply and demand metrics may not apply, merger/acquisition may be on the horizon, and proposed legislation/regulations may be adopted (Meyer, 2019). Regarding issues likely to create volatility, the following may be noted: Natural disaster, global health crisis, supply chain disruption, labor dispute, technology breach, geopolitical instability, and PR/Ethics Scandal (Meyer, 2019).

The next step in conducting a VUCA analysis is to "discuss with your colleagues: Which (of the above) VUCA characteristics are most relevant to the challenges and opportunities you are confronting." (Meyer, 2019, p. 4).

Having determined which of the above VUCA characteristics are most relevant to the challenges and opportunities an organization is facing for each of the VUCA elements) best practices are addressed for those issues; the decision-makers pay particular attention to those issues that are within the span of control or influence, and that will have the most immediate positive impact on customers and on business sustainability (Meyer, 2019).

Regarding these VUCA-related best practices relating to volatility the following may be noted: promote and train for role elasticity and develop generalizing specialists; improve decision-speed; build redundancy into the system and build slack into the supply chain; leverage technology and alternative strategies to ensure continuous communication and collaboration and coordination; focus on learning and capacity building by identifying what is learned and how customers are changing through the volatility; regularly train for various disruptions and ID needed skills (and/or) knowledge (and/or) talent as well as other critical business continuity factors; and, tap high-potentials for temporary assignments (Meyer, 2019).

As for VUCA best practices for reducing uncertainty, the following are considered: tap relational web of skills (and/or), knowledge (and/or), talent (and/or), resources to reduce uncertainty; gather additional information and insight (including customer data, market analytics); improve access to market insights via resources like slack and yammer; and, reflect on (and) share experiences of successfully working through uncertainty (Meyer, 2019).

Additional best practices relating to reducing uncertainty which Meyer (2019) explains include: the givens of the current situation and focus on what is within the span of control;

provide or seek career-pathing (and/or) "stay interviews" to identify people's interests plus strengths to keep them engaged; and, implement agile performance appraisals and regularly provide feedback and acknowledge agile success. Regarding VUCA best practices for reducing complexity, Meyer (2019) identifies the following: Improve communication, collaboration, and coordination; clarify decision-rights; adapt organizational structure and expertise to match the complexity of the context; identify people who have strengths and experience in dealing with complexity; and, recruit and develop people who can thrive in complexity. Regarding VUCA best practices for reducing ambiguity, Meyer (2019) states the following: create (some) clarity; make space for interactions; re-engage and recommit to your purpose; understand and prioritize user (customer) needs; focus on the MVP (Minimal Viable Product); practice rapid prototyping to fail faster and learn quicker; experiment and pilot to discover what is unknown; and, make time to learn the lessons from experience and carry them forward.

There are additional best practices offered by Meyer to help reduce uncertainty in organizations. For example, a greater focus on the givens of a situation and emphasis on what is within one's span of control.

COMMENTS BY SENIOR EXECUTIVES REGARDING MEYER'S VUCA ANALYSIS

The authors had access to both primary and secondary sources and this section includes comments from both types of sources. We begin with comments that the authors gathered through secondary sources.

In a post on the CEO website, Forsythe, Kuhia, & Rice (2018) provide comments by a few CEOs which appear to focus on the relevance and usefulness of VUCA analyses:

1. Comments made by Joe DePinto of 7-11 Store and reported by Forsythe et al. (2018) include the following: "Disruption is as great as we have ever seen it. We are seeing all aspects of VUCA…we are an immediate consumption business…the e-commerce businesses are starting to encroach on our space. They are in fact beginning to redefine convenience as we have traditionally known it. We are working to move our company toward being more of a technology company that works in coordination with our traditional convenience stores...to offer increased convenience (to our customers), We are also focused on utilizing our stores as distribution points for other businesses. Customers can have their boxes shipped to a local 7-Eleven and can pick them up at their convenience. Finally, we are working on digital payment options that are multiple and varied. So, we have all of this going on. It's really being driven by the customer and new e-commerce entrants. It's forcing businesses like 7-Eleven to change the way we have done things in the past." (pp. 2-3).

2. Comments made by Bob Leduc, President of Pratt & Whitney, and reported by Forsythe et al. (2018) include the following: "There is no question that we are in a VUCA environment right now….When you think about our business, we have got a very complicated landscape. We have established competitors, but also emerging competitors,

particularly in China and Russia. We have technology that is constantly advancing, and we have commercial and military customers redefining what their business models are and [what] they value now vs. what they previously did. So basically, the whole landscape is moving on us in many different directions." (p. 5).

3. Comments by Mike Fucci, Chairman of Deloitte, and reported by Forsythe et al. (2018) are as follows: "I'd say the same things that are affecting our clients are affecting us, which is artificial intelligence, robotics and cognitive technology. Our clients are struggling with the question of how they incorporate these innovative technologies into their day-to-day operation. Therefore, if we are going to consult with them, we need to be ahead of the curve and help them decide how they use this technology. We must anticipate things that aren't even fully baked yet, but it's mostly around technology. I call it the 'everything is a what-if' scenario. The way we work is so different. It used to be that that technical experience was kind of all you needed—you had a deep knowledge in something, and you brought that knowledge to clients. We must stay in front of disruption with our clients, and as the chairman, one of the things that concerns me a lot is how do we govern over disruption. So, how do I build nimble leaders to be able to address a little bit of the unknown? That is why the VUCA analogy resonates with me, because it's really more about building leadership than it is about building technical skills." (pp. 6-7).

The analysis by Rossolillo (2021) regarding prospects for Delta Airlines in particular, and the airline industry in general, could be seen as an effort to begin working through the steps in the VUCA process suggested by Meyer (Meyer, 2019). Readers will recall the assertion by Meyer (2019) that an early step in the VUCA process is to decide which of the four (VUCA) characteristics is most relevant to the current situation. In his article, Rossolillo (2021) provides data suggesting because business travel generated more than a third of Delta's total 2019 revenue (and a much higher percentage of Delta's total 2019 profits), uncertainty regarding how quickly business travel will recover after covid-19 is controlled is a very key and critical question.

Meyer (2019) explains that in situations where uncertainty is high, best practices for reducing it include: Tap your relational web of skills (and/or) knowledge (and/or) talent (and/or) resources to reduce uncertainty, gather additional information and insight (including customer data, market analytics), improve access to market insights via resources like slack and yammer, and reflect on (and) share experiences of successfully working through uncertainty. Additional best practices relating to reducing uncertainty which she identifies include: Identify the givens of the current situation and focus on what is within your span of control, provide or seek career-pathing (and/or) "stay interviews" so you can identify people's interests plus strengths to keep them engaged, and implement agile performance appraisals and regularly provide feedback and acknowledge agile success (Meyer, 2019).

Fellows (2021) reports that in a February 2021 presentation on CNBC's "Squawk on the Street," Coca-Cola CEO James Quincey indicated that uncertainty regarding how quickly Coca-

Cola revenues and volumes begin growing is a very key and critical question. Best practices suggested by Meyer for addressing uncertainty are as indicated above.

While the article does not say so explicitly, the analysis by Canal (2021) regarding prospects for streaming services offered by Disney+ and Apple could also be seen as an effort to begin working through the steps in the VUCA process suggested by Meyer (2019). Readers will recall the assertion that an early step in the VUCA process is to decide which of the four (VUCA) characteristics is most relevant to your current situation (Meyer, 2019).

Canal (2021) provides data provided by Netflix co-founder Marc Randolph suggesting that investments by Disney+ have contributed importantly to the company's success in attracting nearly 90 million new subscribers in its first year of operations. Canal (2021) contrasts this success by Disney+ with the lackluster performance of streaming services offered by Apple and quotes Randolph as saying that "if Apple spent one quarter as much on time on content as they do on giveaways, they could really play." (Para. 13). The implication seems to be that ambiguity regarding the business they are in and the business model they are using may be a key and critical question for Apple.

Meyer (2019) suggests that in situations where ambiguity is high, best practices for addressing that issue include: Create (some) clarity, make space for interactions, re-engage and recommit to your purpose, understand and prioritize user (customer) needs, focus on your MVP (Minimal Viable Product), practice rapid prototyping to fail faster and learn quicker, experiment and pilot to discover what you do not know, and make time to learn the lessons from experience and carry them forward.

Primary Sources. Regarding comments by primary sources, these reflect the opinions of the senior executives of two firms: Altos de Tinogasta and Globant. Background information on these two companies and on the comments by their senior executives are captured below.

Altos de Tinogasta: As for background, the business model for this Argentinian company based in Catamarca offers investors the possibility to own not only farmland planted in grapes or olives but also a share of (in the case of land planted in olives) the oil factory or (in the case of land planted in grapes) the wine cellar. The model also offers investors a share of assets like machinery, oil and wine manufacturing facilities, and other fixed assets, in proportion to the number of parcels acquired. The model entrusts the management of all operations (farming, processing of crops, etc.) to Altos de Tinogasta (AT); AT has selected and chosen well-known engineers (with specialized training in vineyards and olive grove management) to manage the operation. Since the beginning AT has been structured as a production/operation driven organization; the main priorities have always been earthmoving operations, construction of irrigation systems, and creation of plantations. Regarding key elements of the marketing strategy AT uses, Smith, Aimar, and Ruedin (2019) indicate the following:

1. ***Target Market*:** Individuals and families in Argentina who are among the ABC1 socio-economic categories.

2. ***Product*:** The 3000 hectares (322, 920 square feet) which AT purchased is being planted in olive trees and in grape-vines. The land planted in olives has been divided up into 216

parcels of 10,000 square meters (107, 640 square feet) each; as for the land planted in grapes, it has been divided up into 208 parcels of 2,500 square meters (26, 910 square feet) each.

3. ***Price***: Land planted in olives has been offered to investors at a price of $27,000 per parcel. The land planted with grape-vines has been offered to interested investors at a price of $15,000 per parcel.

4. ***Promotion***: Over the years, AT has purchased very little radio and/or print advertising. Much of their advertising has been by word of mouth and/or through friends and family relationships plus satisfied investors sharing their experience and reactions with their friends, neighbors, etc. Regarding the message: The benefits AT has offered to investors in the few promotions it has run included pro-rata portions of the total revenue generated by sales of the olive oil or wine produced by AT, increases in the value of the real estate parcel(s) buyers have purchased, and the enjoyment of owning parcel(s) of land in the mountains of Argentina.

5. ***Place (Distribution)***: AT has used a small direct sales force to successfully sell its products (Smith et al., 2019).

Altos de Tinogasta (Comments by a senior executive): The executive references the VUCA model several times. Readers will recall the assertion by Meyer (2019) that an early step in the VUCA process is to decide which of the four (VUCA) characteristics is most relevant to your current situation. As reported by Aimar (2020), the following observations by the executive suggest that in the current situation, he believes uncertainty is the most relevant VUCA characteristic: "It is clear that the pandemic and the effects/consequences that it is generating in the economy will not be resolved in three months, nor in six…this is not a 'zonda' wind that happened but uncertainty…the challenge will be, then, to reconcile the new forms of work, processes, consumption, among others, with the capacities and needs that made AT a concrete reality (there is the) growth of e-commerce...(where) numerator=net income; denominator= investments, assets, expenses…lowering the denominator is a priority in uncertain times…it is time for the reconstruction of the present before futures with a wide range of uncertainty…many companies will disappear, others will weaken, only 20% will survive this crisis…in the long term, with uncertainty dissipated or reduced, companies will find an uncontested market space, instead of fighting in the ultra-competitive market…clear the fog of uncertainty the strategy structure and culture 2021 will emerge from a new scheme of VUCA concepts." (pp. 1-4).

According to Kaivo-Oja and Lauraeus (2018), key issues in modern VUCA management are agility (response to volatility), information and knowledge management (response to uncertainty), restructuring (response to complexity) and experimentation (response to ambiguity). Useful foresight tools are challenging tools, decision-making tools, aligning tools, learning tools and the ability to combine these management tools in the practices of corporate foresight and management systems. The VUCA approach is a key solution concept to

technological disruption. As indicated earlier, Meyer (2019) suggests that in situations where such uncertainty is high, best practices for addressing that issue include the following: Tap into the relational web of skills (and/or) knowledge (and/or) talent (and/or) resources to reduce uncertainty, gather additional information and insight (including customer data, market analytics), improve access to market insights via resources like slack and yammer, and reflect on (and) share experiences of successfully working through uncertainty. Additional best practices relating to reducing uncertainty which she identifies include: Identify the givens of the current situation and focus on what is within your span of control, provide or seek career-pathing (and/or) "stay interviews" so you can identify people's interests plus strengths to keep them engaged, and implement agile performance appraisals and regularly provide feedback and acknowledge agile success.

Globant: Founded in Argentina in 2003 but now headquartered in Luxembourg, Globant is a technology services company which helps client companies develop mobile apps, websites, and digital journeys. Globant has more than 13,000 professionals working for companies like Google, LinkedIn, JWT, EA, and Coca Cola, among others. While its consultants work in more than 16 countries, Sun (2021) indicates that Globant generates 70% of its revenue in North America, nearly 8% in Europe, and the remainder of 22% in Latin America and other countries (Sun, 2021). Sun (2021) also indicates that the 3rd quarter of 2020, Globant's largest customer was Disney Parks and Resorts Online. Globant has been featured as a business case study at Harvard, MIT, and Stanford; in addition, the company was named a Worldwide Leader of Digital Strategy Consulting Services by IDC MarketScape Report (2016 and 2017). Regarding the company's recent performance in this very challenging environment, comments which can be made include the following:

Globant's revenue rose by 26% to $659.3 million in fiscal 2019, aided by the following:

1. In the first nine months of 2020, Globant's revenue rose 22% year over year to $581.5 million. Its adjusted gross margin dipped 180 basis points to 37%, partly due to COVID-19 costs, while lower utilization rates reduced its adjusted operating margin 240 basis points to 14.8%. However, its robust revenue growth still lifted its adjusted EPS by 6%.

2. Sun (2021) indicates that during last quarter's conference call, CFO Juan Urthiague estimated that Globant's adjusted operating margins "would stay between 15%-17% in the near and mid-term as its revenue growth and utilization rates rebound toward pre-covid-19 levels." (p. 2).

Globant (comments by a senior executive): Aimar (2021) reports that the executive indicates that at Globant, VUCA analyses are "applied and carried out by all our managers, having as an initial trigger a series of assumptions and hypotheses that are defined for each country, market, or geography. On some occasions we take input from consulting firms such as PW, BCG, (and/or) McKinsey, that is, external organizations." (pp. 1-2). Aimar (2021) goes on to report that the executive made the following additional VUCA-related observations: "we do

not measure (the four VUCA characteristics) in quantitative terms…(for example) there is no complexity index that can be used as an indicator….Fiscal Year 2020 was evidence of the importance of the VUCA analysis. In March/April 2020 we had to take the plan prepared in 2019 and reinforce it, given the nature and magnitude of the uncertainty and volatility generated by covid…we respect the long-term commitments but are being flexible in our short-term agenda. This means that "strategy emerges as we walk down the road." (pp. 2-3).

As indicated above, the executive highlights two VUCA characteristics (that is, uncertainty and volatility) as being especially relevant to Globant's situation. The implication is that both the uncertainty and the volatility-related best practices identified by Meyer could be especially relevant to him. As indicated earlier, best practices for reducing uncertainty, according to Meyer (2019) may be identified as the following: Tap your relational web of skills (and/or) knowledge (and/or) talent (and/or) resources to reduce uncertainty, gather additional information and insight (including customer data, market analytics), improve access to market insights via resources like slack and yammer, and reflect on (and) shared experiences of successfully working through uncertainty. Additional best practices relating to reducing uncertainty include: "Identify the givens of the current situation and focus on what is within your span of control, provide or seek career-pathing (and/or) "stay interviews" so you can identify people's interests plus strengths to keep them engaged, and implement agile performance appraisals and regularly provide feedback and acknowledge agile success: (Meyer, 2019).

As discussed earlier, best practices for reducing volatility, according to Meyer include: Promote and train for role elasticity and develop generalizing specialists; improve decision-speed; build redundancy into your system and build slack into the supply chain; leverage technology and alternative strategies to ensure continuous communication and collaboration and coordination; focus on learning and capacity building by identifying what you are learning and how you and your customers are changing through the volatility; regularly train for various disruptions and ID needed skills, knowledge, and/or talent as well as other critical business continuity factors; and, tap into your high-potentials for temporary assignments (Meyer, 2019).

IMPLICATIONS FOR THE CURRENT PANDEMIC ENVIRONMENT

Under current market conditions of corporate foresight, turbulence is a key element of the business landscape. Such turbulence is exacerbated by the pandemic environment and can be summarized using the trendy managerial acronym ''VUCA'': volatility, uncertainty, complexity and ambiguity (Kaivo-Oja, & Lauraeus, 2018). We have identified a few major changes in the current business environment, including the conflict between order and disorder (a characteristic associated with both uncertainty and complexity) and movement (that is, variability). Managers need tools to address these issues. After suggesting that VUCA analysis is one such potentially relevant and useful tool and after providing a bit of background on the model and on the definitions of the VUCA variables, the authors describe a straightforward process for conducting a VUCA analysis suggested by Meyer (2019). The authors also provide comments by several senior managers regarding the relevance and usefulness (in today's changed and changing

environment) of VUCA analysis. We believe the following implications flow from our in-depth examination of the above topics:

1. The profound and systemic recent changes in characteristics of the current business environment have already and will continue to provide serious challenges to companies and their managers.
2. Senior managers across a variety of different industries indicate that VUCA analysis is a relevant and useful tool for dealing with the realities of a changed and continually changing environment.
3. The VUCA analysis process described by Meyer (2019) seems useful; it is straightforward but also (and more importantly) provides executives with actionable recommendations regarding issues likely to need special attention and (for those areas) actions likely to be especially useful.
4. It turns out that developing and better-utilizing human capital (including training, career-pathing, development and utilization of expertise, and experimentation) show up as a "best practice" for dealing with challenges flowing from each of the VUCA variables (that is, Variability, Uncertainty, Complexity, and Ambiguity). It seems clear that the tension between order and disorder plus the continuous presence of movement (i.e., characteristics of our changing environment, and elements underlying VUCA analysis), can generate new perspectives and cause questioning and continuous organizational learning. When managers fight, question, learn together to discover the new, this creates tension in successful organizations and can be a creative source of the company's continued development.
5. In their reflections regarding VUCA and its usefulness, several senior executives mentioned issues identified in the call for papers for this special issue as "topics of interest;" issues commented on and the executive making those comments include:
    a. Regarding customer service, by DePinto: "...we are an immediate consumption business…the e-commerce businesses are starting to encroach on our space. They are in fact beginning to redefine convenience as we have traditionally known it. We're working to move our company toward being more of a technology company that works in coordination with our traditional convenience stores…to offer increased convenience (to our customers)." (Forsythe et al., 2018, pp. 2-3).
    b. As for technological innovation and disruptions, by Leduc: "We have technology that is constantly advancing, and we have commercial and military customers redefining what their business models are and [what] they value now vs. what they previously did." (Forsythe et al., 2018, p. 5).
    c. Reflecting on technological innovation and disruptions, by Fucci: "I'd say the same things that are affecting our clients are affecting us, which is artificial intelligence, robotics and cognitive technology. Our clients are struggling with the question of how they incorporate these innovative technologies into their day-to-day operation. Therefore, if we're going to consult with them, we need

to be ahead of the curve and help them decide how they use this technology.…We must anticipate things that aren't even fully baked yet, but it's mostly around technology. I call it the "everything is a 'what-if' scenario…" (Forsythe et al., 2018, pp. 6-7).

d. In reviewing liquidity and bankruptcy issues by a senior executive from Altos de Tinogasta, as has been mentioned earlier in this manuscript: "...many companies will disappear, others will weaken, only 20% will survive this crisis..." (Aimar, 2020, p. 3).
e. Regarding technology innovation and disruption issues by a senior executive from Globant, mentioned earlier in this manuscript: "VUCA context favors this course (that is, artificial intelligence, or AI) of action. AI is knowledge and technology; it produces great changes…"

6. The authors believe that the above observations by senior executives in a variety of industries relating to issues identified in the call for manuscripts for this special issue support the following ideas:

    a. The COVID-19 pandemic and global health crisis has not introduced change to the business environment; rather, it has increased the number of dimensions which are changing and accelerated the pace of those changes.
    b. VUCA analysis has the potential to be an extremely useful and relevant managerial tool, for managers struggling to cope with the COVID-19/post-COVID-19 business environment, that is, a business environment featuring not only an increased number of dimensions of change but also an acceleration in the speed of those changes.

CONCLUSION

This article began by highlighting several characteristics (order, disorder, and movement) of the current environment in which we live and work. It seems clear that organizations need tools to help cope with challenges from our changing environment; one tool which seems likely to be useful is VUCA analysis. Therefore, the origins of VUCA analysis and definitions of its four components (Volatility, Uncertainty, Complexity, and Ambiguity) were discussed. After describing a process for doing VUCA analysis suggested by Meyer (2019), the article provided several comments and/or examples were provided by executives and/or analysts, regarding VUCA analyses and their usefulness.

Based on the research carried out by the authors using primary and secondary sources, several important implications emerged. There is a belief that our environment will continue to change, and during this changing environment, VUCA analysis can be a useful tool. The VUCA analysis can be used by managers across a variety of industries, to make decisions. A third and final important implication from our examination of this topic is that the primary and secondary source executive comments suggest that VUCA analysis has the potential to be useful to managers dealing with many of the issues identified in the prevailing COVID-19 pandemic era.

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