

A Proposed Framework for Talent Management Development

Dana FATOL¹, Diana ROBESCU², Igor RIZNAR³, Anca DRAGHICI⁴

Abstract: For keeping a competitive advantage within a dynamic business environment and being ready to face a crisis when occurred, organizations should make sure they have the right competencies and behaviors in-house through a proper talent management. Considering the existing literature and current practices related to talent management, in this paper we are proposing a new general and simplified model that leverages neuroscience practices to support learning and employees' experience for improving their skills and behaviors towards a better performance. The model and its elements will be subjects to further studies.

Keywords: Talent Management, Talent Development, Employee Competencies, Neuroscience, Human Resources

I. INTRODUCTION

Organizations that take a strategic approach towards the HR development and have strong talent management (TM) programs achieve the competitive advantage within any market. The human capital, as intellectual asset of any company, needs to possess the right competencies, attitude, and have a positive mindset to support future growth and innovation (Kravariti & Johnston, 2020).

Ten years ago, Klett (2010) has published the competency-based holistic model for Human Resources Management (HRM) strategy, which is containing the main components of a web-based strategic structure that allows identifying, mapping, and planning of workforce development (Figure 1).

Using the proposed holistic competency based HRM model and associated approach, HR professionals can easily satisfy the need for specific competencies for different roles related to the organizations, allowing to track those and enable proper assignment of the people to the right jobs. The model considers two types of competencies: behavioral and technical. The behavioral ones are considered more like soft skills and can be taken in on various job

descriptions, as the technical competencies are unique for each role. Monitoring employees' life cycle or careers, as well as certifications and potential gaps of competencies are essential for further identification of the best learning and development opportunities. Learning management systems offer employees self-paced and self-organized opportunities to get the right knowledge, identifying gaps, monitoring progress and results (Klett, 2010).

Competency-based approach is now more or less generalized in modern organizations; it seems in the 1990s up to 75% of organizations already used competency-based methods (Sliter, 2015). Competencies are generally considered to be combinations of knowledge, skills, abilities, and other individual attributes that are necessary for performing job and for measuring the individual performance. From the organizational perspective, the competency-based model should be strategic, functional and flexible (Sliter, 2015).

Furthermore, defining organization's core competencies gives employees the proper understanding on what they need to be productive (in terms of knowledge, skills, abilities) and in the same time allow organization to evaluate the availability of the required resources. Linking competencies with Talent Management (TM) can become a win-win situation, allowing companies to make sure they have the best workforce in house and develop a strategic human resource management system (Wuim-Pam, 2014).

In this context, the present paper's objective is to introduce a new TM framework based on a brief and consistent literature review on TM and preliminary arguments for introducing neuroscience approach in HRM.

¹ Politehnica University of Timisoara, Romania, dana.fatol@student.upt.ro

² Politehnica University of Timisoara, Romania, diana.robescu@student.upt.ro

⁴ University of Primorska, Koper, Slovenia, igor.riznar@guest.arnes.si

³ Politehnica University of Timisoara, Romania, anca.draghici@upt.ro

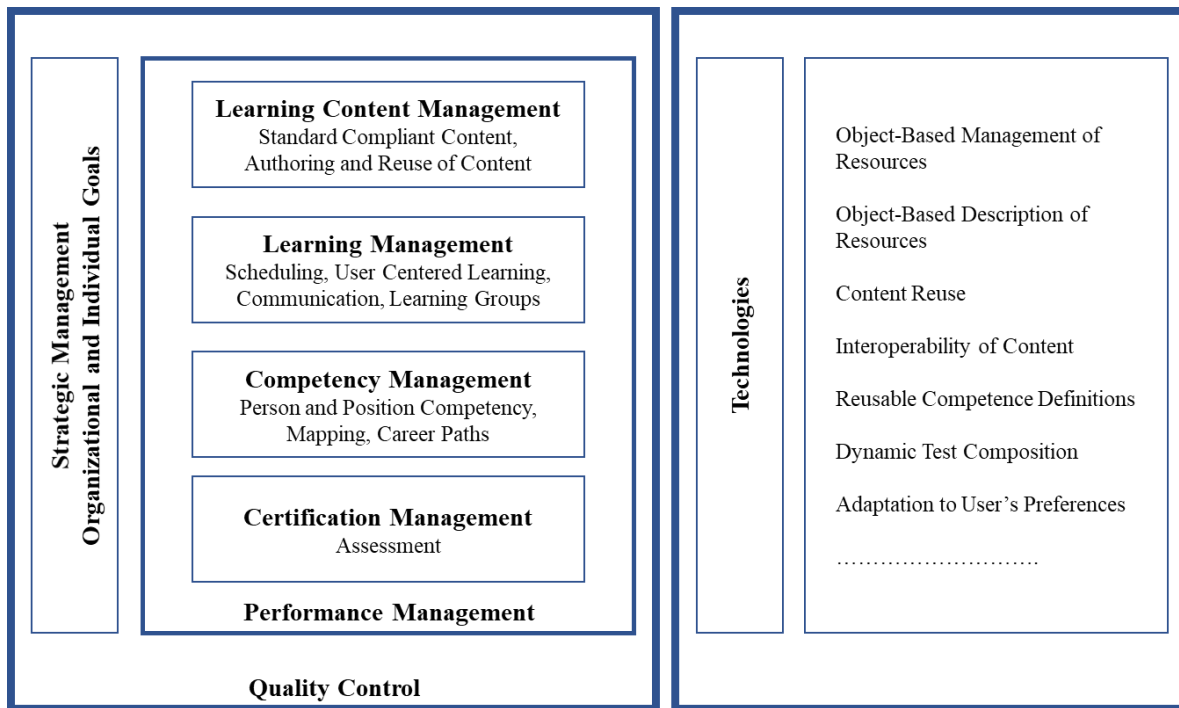


Figure 1: Main components of a holistic competency based HRM structure (Extended from (Klett, 2010))

II. LITERATURE REVIEW ON TALENT MANAGEMENT

A. A general view on talent concept and management

In industrial-organizational psychology, the talent is seen from an individual differences' perspective, covering the cognitive ability, knowledge, and personality. From the education psychology perspective, talent is seen as giftedness, the possession and use of natural abilities, mainly across four domains: intellectual, creative, socio-affective and sensi-motor. Those could be transformed into real talent in the field of academics, arts, business, leisure, social action, sports or technology. There has always been a dispute on innate vs. acquired talent, about the extent to which talent can be taught or learned. According to some views, TM requires identification and recruitment of talent, for other researchers there is a focus on learning and experience. In some cultures, such as Western European, it is believed that talent is innate, while in other, such as Asian cultures, talent is the results of many years of hard work and dedication (Dries, 2013). From the literature perspective, TM is based on theories of organizational behavior and human resource management. The key for strategic TM system is the development of a talent pool and creation of a HR architecture to maximize the potential for exploiting those talent pools (Collings & Mellahi, 2009). "The systematic identification of key positions which differentially contribute to the organization's sustainable competitive advantage, the development of a talent pool of high potential and high performing incumbents to fill these roles, and the development of a differentiated human resource architecture to facilitate filling these positions with competent

incumbents and to ensure their continued commitment to the organization" (Collings & Mellahi, 2009).

The question whether talent is predominantly an innate construct or completely acquired (or something in between) remains unanswered due to the lack of an in-depth theoretical framework or conceptual foundation. On the one hand, talent is often described as an innate ability that manifests in a particular field (Tansley, 2011), and consequently, equated with excellent performance in a given field (ranging from music to chess and from sports to visual arts). On the other hand, for some researchers, talented people are made through deliberate practice and learning (Ericsson et al., 2007; Pfeffer and Sutton, 2006; Ericsson 2006).

An exclusively pragmatic view on the matter under discussion would very likely try to avoid the distinction between innate and acquired elements of talent and argue that the nature-nurture debate is untenable, especially under the recent developments in the field of brain and mind science, genetics and evolution. Cognitive science has shown that there are complex innate mechanisms for learning as well as tool kits in the genome that help structure the brain during development, and mechanisms of plasticity that make learning possible. This calls for a new, extremely complex, nature vs. nurture debate, which will exclude the notion of innate vs acquired as two strictly unconnected alternatives.

In this context, it is easy to understand why some HRM practitioners focus on talent identification while others focus on talent development but would warn the future TM practitioners to rethink their ideas in the light of new discoveries so that their theoretical background may not appear too simplistic or even wrong. In the absence of a sound theoretical

background, TM will remain a pompous pseudo-scientific alternative for what has been known as HRM.

B. A simplified model for HR talent

The most simplified model for defining HR talent has only three essential “ingredients” (Ulrich, 2007; Ulrich, 2015):

$$HR\ Talent = Competence \times Commitment \times Contribution \quad (1)$$

Equation (1) known as The Talent Trifecta was released around 2007 and can be applicable in any business context. Competence can be reduced to “right skills, right place, right job”. When defining competencies, HR professionals will have to understand first the future customer expectations in a changing business environment and translate those into current employee requirements as soft and hard skills. However, without commitment or engagement, employees will not put enough effort and time in reaching their targets. Employees have a higher level of commitment when their organizations facilitate the sense of community, encourage good communication and work flexibility, provide opportunities and good incentives, give a sense of direction, and create an impact. Furthermore, people’s interest must be kept at higher levels, so they feel they are making a real contribution through their work, having a purpose and same time meeting their personal needs. “Competence deals with the head (being able), commitment with the hands and feet (being there), and contribution with the heart (simply being)” (Ulrich, 2007; Ulrich, 2015).

According to the literature review in the field of modeling TM of there have been centralized the following observations:

- TM is highly contextual. Both the organizational internal and external context affect the intended TM strategy, including the actors involved in TM and their interrelated logs (Collings & Mellahi, 2009; Jantan et al., 2009; Thunnissen & Buttiens, 2017);
- There is a dominant of empirical studies in TM (Gallardo & Thunnissen, 2016);
- Fuzzy logic approach could be implemented for talent management (Jantan et al., 2009; Karatop et al., 2015);
- There is a knowledge gap in mathematical modeling TM approach.

C. The key competencies of the future

The define Volatile, Uncertain, Complex, and Ambiguous (VUCA, Figure 2) environment requires HR and TM professionals to change the focus and methods of leadership development. Thus, VUCA environment has been recognized since late 1990s by the U.S. military, referring to situations that could be encountered and it seems that is adequate to actual instable and insecure environment generated by the Covid-19 in the economic field. According to the literature, initially the military institutions have been developing leaders who could lead through a VUCA reality (Schoemaker et al., 2018).

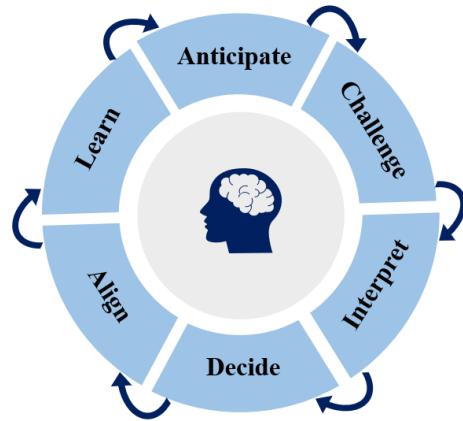


Figure 2: Six leadership disciplines needed for VUCA (adapted from (Schoemaker et al., 2018))

When organizations are in a threat context (e.g., losing clients or key suppliers, losing market share etc.), there were identified six behavior dimensions needed for overcoming the situation (Schoemaker et al., 2018):

1. Anticipate: searching useful and critical information and practices beyond the current boundaries, same time expanding the network of people who can support this action;
2. Challenge: using critical thinking to question the current belief and mindsets, reframing issues to understand root causes, uncover biases and manipulation;
3. Interpret: gathering information from many sources before developing an opinion, understand patterns and test multiple hypotheses;
4. Decide: framing the decision and approach, balance quality and agility, and make commitments even with incomplete information;
5. Align: fostering open dialogue and engage key stakeholders, understand what drives agendas and is hidden, bring in tough issues to pinpoint misalignment, provide a strategic vision;
6. Learn: viewing success and failure as sources of critical insights, encourage transparent communication, stay agile and celebrate success.

Either there are leaders of the organizations or the employees, the six actions to be taken, for transforming an organization under threat or adapting to changing environments, require certain competencies which can be translated into soft skills like critical thinking, cognitive skills, emotional and social intelligence, and ability to adapt to change (Schoemaker et al., 2018).

The post-COVID-19 pandemic business environment brought the VUCA concept to a new level and exposed the vulnerabilities of the companies. The talent pool was reconfigured to be able to handle the crisis overnight. Three additional competencies were found critical and necessary for employees to be effective in an uncertain and novel environment: tolerance for ambiguity, resilience, and curiosity (Caligiuri, 2020). In a rapidly changing business environment, the hard skills are subject to continuous

adaptation and transformation due to automatization and digitalization, many companies turning more to the soft skills as main criteria for talent acquisition and development.

III. THE PROPOSED MODEL FOR TALENT MANAGEMENT

A. Preliminary arguments for neurosciences in HR

From the literature perspective, there have been explicitly recognized that started with Brown et al. (2015) book entitle: “The Fear-Free Organization: Vital insights from neuroscience to transform your business culture”, there are changes in the way in which HR is seen in organization. Further, important studies have provided new methods and tools based on the intervention of the neurosciences in the field of HRM, thus being recognized as having a great potential on supporting employees professional behavior development (in brief presented in Table 1). The results of interdisciplinary research (with the support of neurologists and cognitive sciences) on HR have (re-)confirmed important facts of HRM (which has

been enriched and expanded): all human thinking, actions and feelings are based on emotions (also stated by the researches of Rock from 2006 till 2010):

- HR practices that induce emotions of avoidance or escape (fear, insecurity, anger, disgust, shame and sadness) are counterproductive, because the individual will develop a survival behavior;
- On the other hand, it is much more productive to induce in work groups (generalized in the organizations) emotions related to attachment, growth, involvement, prosperity (joy, trust, love, appreciation, recognition) which stimulates creativity and increases individuals’ ability to operate and to act in effective manners.

Early models in psychology described human behavior in terms of stimulus and response. However, advancements in psychology and neuroscience have shown that several stages fall in-between stimulus and response. As seen in Figure 3, SAFE-TBO model states that, initially, information is filtered through our attitudes before being processed as feelings, emotions and thoughts; the response to this is our behavior, from which there is an outcome.

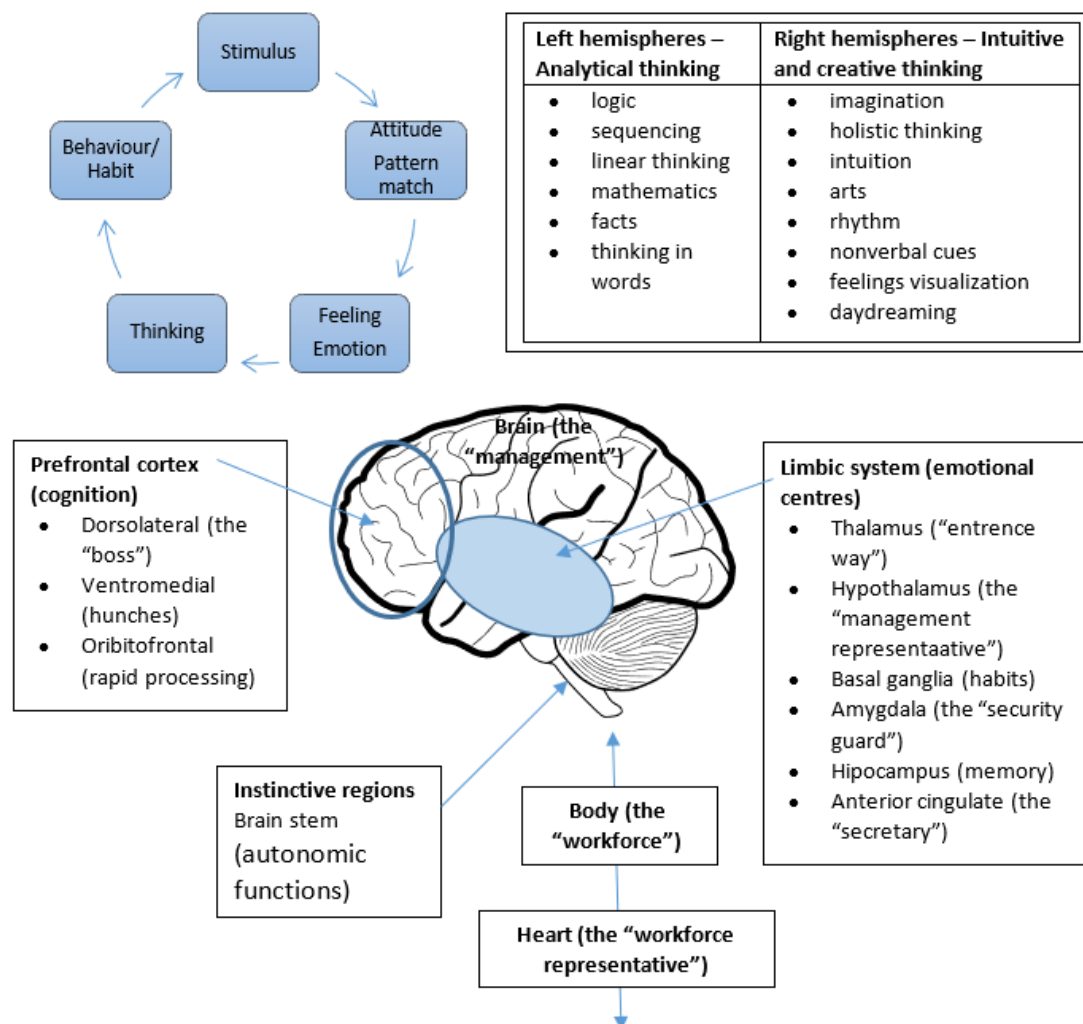


Figure 3: The SAFE-TBO model and the reflection of the brain involvement in behavior (basics of neurosciences)

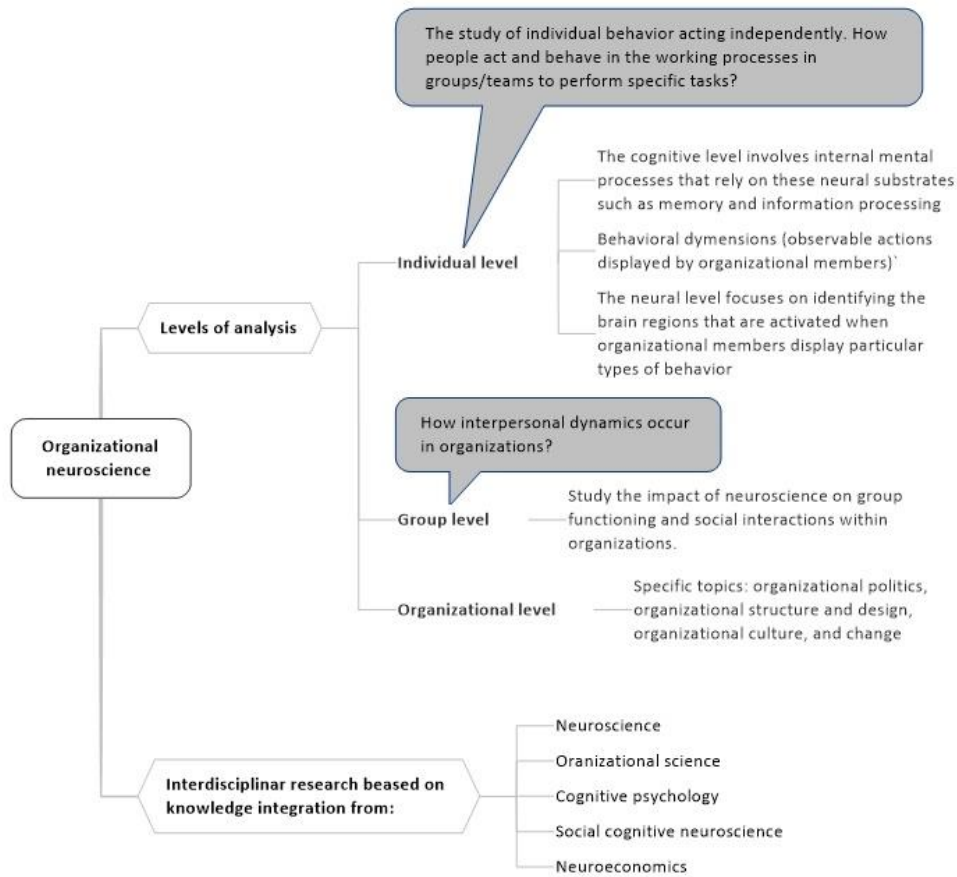


Figure 4 The organizational neurosciences as interdisciplinary science (synthesis from (Beugré, 2018))

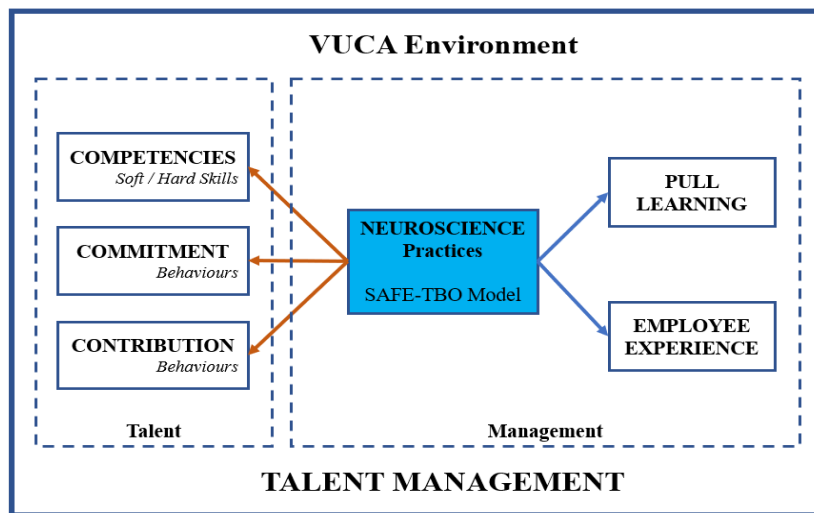


Figure 5: The proposed model for Talent Management

Table 1. A synthesis on existing studies in HR using methods and tools of neurosciences

Year	Models, methods and tools of neurosciences	References
2006 - 2007	Introducing a brain-based approach for observing and supporting individual behavior change needed in an organizational context Presentation of Four Faces Insights Model	(Rock & Schwartz, 2006; Butler & Senior, 2007)
2008	SCARF model (developed by David Rock one of the first pioneers in neuro-leadership) use the application of neuroscience in studying leadership and in coaching practices. The SCARF model is defined as a brain-based model for collaborating with and influencing others. It outlined several domains of human experience (status, certainty, autonomy, relatedness and fairness), around which our perceptions activate different areas of the brain. This determines how individuals react, stimulating either a <i>reward</i> or <i>threat</i> (or <i>fight</i> or <i>flight</i>) response.	(Rock, 2008)

2009-2011	Identify and characterize the neurosciences support for management. Introduce the brain-based alternate approach that can radically improve the performance management ability of leaders in modern-day organizations. Researchers have documented that the threat response is often triggered in social situations, and it tends to be more intense and longer lasting than the reward response. Data gathered through measures of brain activity (using functional magnetic resonance imaging, fMRI and electroencephalograph, EEG) suggests that the same neural responses that drive individuals toward food or away from predators are triggered by their perception of the way they are treated by other people.	(Rock, 2009; Rock, 2010; Rock & Page, 2009; Rock & Larkin, 2011; Becker et al., 2011).
2014	Presentation of the Model of Co-Production in Organizational Cognitive Neuroscience considered as a new neuromarketing research model. According to this, “knowledge is produced in the context of a real-world problem and the theoretical development is co-negotiated with practitioners. The Model of Co-Production reflects this intersection, highlighting both rigor and relevance, or the quest for fundamental understanding and the conditions of use”.	(Butler, 2014)
2014 - 2016	Exploring new frontiers of organizational cognitive neuroscience; the arguments given by the literature review described methods and tools used for neurosciences in economics, in leadership, coaching, building trust, change management etc.	(Butler et al., 2016; Zak, 2017)
2019-2020	Introducing new research perspective with Big Data, Data Analytics and Data Mining. A new ethical context is intensively discuss regarding the use and exploitation of personal and medical data	Fothergill et al., 2019; Martineau & Racine, 2019; Clark, 2020)

The early studies of 2006 – 2011 (Rock & Schwartz, 2006; Rock, 2008; Rock, 2009a; Rock, Rock, 2009b; Rock, 2010; Rock 2011) in the neurosciences field and many others now emerging have made one thing clear: The human brain is a social organ. Its physiological and neurological reactions are directly and profoundly shaped by social interaction. Indeed, as Lieberman puts it, “Most processes operating in the background when your brain is at rest are involved in thinking about other people and yourself”. This presents enormous challenges to managers. Although a job is often regarded as a purely economic transaction, in which people exchange their labor for financial compensation, the brain experiences the workplace first and foremost as a social system. Like the experiment participants whose avatars were left out of the game, people who feel betrayed or unrecognized at work (e. g., when they are reprimanded, given an assignment that seems unworthy, or told to take a pay cut) experience it as a neural impulse, as powerful and painful as a blow to the head.

Most people who work in companies learn to rationalize or temper their reactions; they “suck it up,” as the common parlance puts it. But they also limit their commitment and engagement. They become purely transactional employees, reluctant to give more of themselves to the company, because the social context stands in their way. Leaders who understand this dynamic can more effectively engage their employees’ best talents, support collaborative teams, and create an environment that fosters productive change. Indeed, the ability to intentionally address the social brain in the service of optimal performance will be a distinguishing leadership capability in the years ahead (Rock, 2011).

Cognitive sciences contributions in HRM are already well recognized by the literature but there is a

new emerging perspective that have been introduces by the neuroscience, and most by behavior neuroscience (Becker et al., 2011; Butler et al., 2016; Londhe, 2018). Organizational cognitive neuroscience has been recognized and defined as “applying neuroscientific methods to analyze and understand human behavior within the applied setting of organizations. This may be at the individual, group, organizational, inter-organizational and societal levels. Organizational cognitive neuroscience draws together all the fields of business and management, including their operation in the wider social world. It does this to integrate understanding about human behavior in organizations and, consequently, to more fully understand social behavior” (Butler & Senior 2007). Furthermore, different neuroscientific methods and techniques were applied in the study of organizational phenomena, most being dedicated to economics and marketing given the fact that neuroeconomics and neuromarketing are already well-known research areas (Butler et al., 2016), but less studies address HRM aspects.

Figure 4 presents and overview of the organizational neuroscience interdisciplinarity together with the possible levels of analysis (Beugré, 2018). In addition, important findings in the field were published by the NHRD Network Journal, Volume 11 Issue 4 (October 2018), a special issue entitled “Neuroscience and HRM” (Guest Editors: Gopal P. Mahapatra and Shruti Tewari). The main fields of research were: “Neuroscience of Leadership and Coaching” and “Managing Emotion Through Neuroscience”, but a collection of valuable book review have been added.

B. Neurosciences in TM

A study done in 2017 on 117 Chinese manufacturing companies (located in Shanghai and Suzhou, areas considered important economic hubs)

has examined the effect of external knowledge management and talent management strategies in Chinese manufacturing firms. This study underlines that China manufacturing companies' demand and supply of talented employees were proven unbalanced; due to brain drain and knowledge, China was facing a shortage of talented employees. In addition, the empirical study confirmed that both talent management and knowledge management contribute positively to the performance of manufacturing companies, if included in their strategies (Ali et al., 2017). Complementary to these facts, a recent study of Iqbal and the collaborators (2020), conducted across a few rural and urban areas in China with a sample of 2077 young, well-educated and highly skilled respondents, showed as well a brain drain, as the human resources find better compensation, education and lifestyle outside their country (Iqbal et al., 2020).

From the strategic perspective of the HRM literature there have been recognized that

well-developed practices can have a positive effect on companies' performance indicators, but it seems there is no clear theory or principles on how to manage the talent pools (Lewis & Heckman, 2006). Thinking beyond the normal talent shortage in a dynamic and competitive business environment, COVID-19 pandemic brought additional challenges with a strong impact, forcing companies to reassess their priorities related to HR and finding better ways to TM.

Having as base the talent definition given by Formula (1) and considering the current disruptive business environment, we were looking towards finding a new model for better management of the skills and behaviors needed from employees, thus for TM (Figure 5). Leveraging the neuroscience practices, we are considering that two main elements (pull learning and employee experience) can have an impactful influence on peoples' competencies and behaviors.

Figure 5 illustrates the main elements of the proposed Model for TM and how they are framed into the TM structure within the current and future VUCA environment. We considered that a simplified general approach was necessary, so can be applied to all kind of organizations within every industry, being subject to further development according to the business specifics.

Neuroscience, that studies how the brain is functioning, has been used for years for personal improvement, for facilitating change and decision making, problem solving, emotional control, and boosting collaboration. Over the last years, new information about the brain science and human behavior was released and continue to be made available, giving interesting details on the learning process and what motivates people (Sloman et al., 2020). We can often identify a gap between science and business reality. To close it, we have now the opportunity to use some of the well-known neuroscience practices considering the SAFE-TBO model. The way in-house talent is managed can be

readjusted and their performance can be increased if we analyze and consider the employees' attitude towards work, therefore their behavior.

Considering the customer needs and combining best practices from the business with the scientific discoveries, we can upgrade the existing methods and processes of any organization.

Knowing that 95 % of the brain activity is unconscious, only through proper training and motivation we can target to reach the full potential of the employees. Automatization and digitalization support the linear thinking; therefore, the HR professionals and business leaders should focus on increasing agility, creativity, and intuition of employees by re-educating themselves in using specific neuro-techniques (Pillay S., 2016).

Pull learning strategies consist in creating an ecosystem of on-demand learning resources, with many options to choose from and with possibility of the employees to decide what is useful and relevant for them. Being independent to choose on their own, they will feel empowered and more likely to put the learning into practice, and as result to have better performance on the job and an increased engagement. There are at least five reasons for which one individual will adopt a pull learning mindset: curiosity, staying relevant, thinking and innovation, just-in-time need, growth and earning a certification (Pretera, 2015). Extracting only growth from the list of reasons, if considered as one of the companies' values and cultivate it continuously, can support employees to believe their talents can be developed through hard work, good strategies, and feedback from others. The growth mindset will have a positive influence on increasing the effort, the interest in learning and commitment to the job (Dweck, 2016).

The people with a growth mindset does not have in mind incentive rewards as the outcome but focus on the work and development. They have a high intrinsic motivation that drives their behavior towards developing their competencies, learning more and adopting change when needed. Dopamine, as the predominant neurotransmitter in the brain, influences the reward and pleasure centres, as well as the emotional behavior and motivation. Dopamine neurons that are influenced by unexpected rewards, have an impact on behaviors and engagement. People are more likely to make voluntary commitment to a job task if is a free choice involved and autonomy is recognized. This strongly supports the intrinsic motivation, therefore the learning willingness (Ng, 2018).

One important role of HR practitioners is to understand how the employees are feeling about the company, what are their challenges and their expectations. Once it is understood how the organization and working environment is perceived, HR can leverage neuro-scientific techniques for improving the employees' journey, to support them navigate better through disruption, transformation, and uncertainty, same time facilitating their development. The employee experience is strongly linked with commitment and contribution, as well as with the

development of competencies through continuous learning.

IV. CONCLUSION

Despite the global HR crisis of the last years, which have been accompanied by the TM crisis managers concerned on HRM problems are still actual. The dynamic business context that can be defined as a VUCA environment and current crisis generated by the COVID-19 pandemic are challenging the leaders' decisions on how to increase efficiency and effectiveness of TM. Employers recognize that an engaged, skilled and motivated workforce is the key to growth and to achieve competitive advantage. The crisis, however, impels organizations to be more creative and effective in their TM approach. From the literature perspective, the academic research in the field of TM has not provide a solution to the TM (in terms of a generalized model, effective methods and tools). In fact, intensive research on TM over the last ten years, do not established any consensus on its definition, theoretical backgrounds and scope.

Nowadays, soft skills are gaining more importance than ever, and organizations are reassessing the required competencies within an uncertain business environment, considering new ways of working. When companies are lacking talent with the necessary competencies identified for great business performance, they become vulnerable whenever a crisis occur, and not be able to detect the threats, nor opportunities to overcome the challenges.

As there is little empirical evidence that would support the traditional view of talent according to which people have special innate abilities that lead to exceptional performance, it would be recommended to focus on learning methods and employee experiences that support improved human performance (Hambrick et al., 2016). The "learning pull" approach rather than "technology push" is preferable to be adopted, fostering a growth mindset within the organizations, and facilitating self-paced development through a strong learning management system.

We believe that taking into consideration the proposed framework, by using the neuroscience practices for TM through the glasses of SAFE-TBO model, organizations will be able to keep their competitive advantage when crises occur and even become more successful. The proposed model will be subjects to further research.

REFERENCES

- [1] Ali M., Lei S.H., Hussain S.T. (2017). Relationship of external knowledge management and performance of Chinese manufacturing firms: The mediating role of talent management. *International Business Research*, 10(6), 248-58.
- [2] Becker, W. J., Cropanzano, R., & Sanfey, A. G. (2011). Organizational neuroscience: Taking organizational theory inside the neural black box. *Journal of Management*, 37(4), 933-961.
- [3] Beugré, C. D. (2018). *The Neuroscience of Organizational Behavior*. Edward Elgar Publishing. Retrieved from: https://www.elgaronline.com/view/9781783475537/08_introduction.xhtml [Accessed 8 June 2020]
- [4] Butler, M.J.R., & Senior, C. (2007). Research possibilities for organizational cognitive neuroscience. *Annals of the New York Academy of Sciences*, 1118, 206–210.
- [5] Butler, M. J. (2014). Operationalizing interdisciplinary research - a model of co-production in organizational cognitive neuroscience. *Frontiers in Human Neuroscience*, 7, 720.
- [6] Butler, M. J., O'Broin, H. L., Lee, N., & Senior, C. (2016). How organizational cognitive neuroscience can deepen understanding of managerial decision-making: A review of the recent literature and future directions. *International Journal of Management Reviews*, 18(4), 542-559.
- [7] Caligiuri, P., De Cieri, H., Minbaeva, D., Verbeke, A., & Zimmermann, A. (2020). International HRM insights for navigating the COVID-19 pandemic: Implications for future research and practice. *Journal of International Business Studies*, 1.
- [8] Clark, K. R. (2020). A field with a view: Ethical considerations for the fields of consumer neuroscience and neuromarketing. *Ethical Dimensions of Commercial and DIY Neurotechnologies*, 3, 23.
- [9] Collings, D.G., & Mellahi, K. (2009). Strategic talent management: A review and research agenda. *Human resource management review*, 19(4): 304-13.
- [10] Dries, N. (2013). The psychology of talent management: A review and research agenda. *Human Resource Management Review*, 23(4), 272-285.
- [11] Dweck C. (2016). What Having a "Growth Mindset" Actually Means [online]. Retrieved from: <https://hbr.org/2016/01/what-having-a-growth-mindset-actually-means> [Accessed 12 May 2020]
- [12] Ericsson, K.A. (2006). The influence of experience and deliberate practice on the development of superior expert performance. In K.A. Ericsson, N. Charness, R.R. Hoffman, & P.J.Feltovich (Eds.), *The Cambridge Handbook of expertise and expert performance* (pp. 685-705). New York: Cambridge University Press.
- [13] Ericsson, K.A., Prietula, M.J. and Cokely, E.T. The making of an expert. *Harvard Business review*: 85(7/8), 115-121. 2007
- [14] Fothergill, B., Knight, W., Stahl, B. C., & Ulnicane, I. (2019). Responsible Data Governance of Neuroscience Big Data. *Frontiers in Neuroinformatics*, 13, 28.
- [15] Gallardo, E., & Thunnissen, M. (2016). Standing on the shoulders of giants? A critical review of empirical talent management research. *Employee Relations*, 38(1), 31-56
- [16] Hambrick, D. Z., Macnamara, B. N., Campitelli, G., Ullén, F., & Mosing, M. A. (2016). Beyond born versus made: A new look at expertise. In *Psychology of learning and motivation* (Vol. 64, pp. 1-55). Academic Press.
- [17] Iqbal, K., Peng, H., Hafeez, M., Wang, Y., & Li, C. The current wave and determinants of brain-drain migration from China. *Human Systems Management*, (Preprint), 1-14.
- [18] Jantan, H., Hamdan, A. R., & Othman, Z. A. (2009). Knowledge discovery techniques for talent forecasting in human resource application. *World Academy of Science, Engineering and Technology*, 50, 775-783.
- [19] Karatop, B., Kubat, C., & Uygun, Ö. (2015). Talent management in manufacturing system using fuzzy logic approach. *Computers & Industrial Engineering*, 86, 127-136.
- [20] Klett F. (2010). The design of a sustainable competency-based human resources management: A holistic approach. *Knowledge Management & E-Learning: An International Journal*. 2(3): 278-92.
- [21] Kravariti, F., & Johnston, K. (2020). Talent management: a critical literature review and research agenda for public

- sector human resource management. *Public Management Review*, 22(1), 75-95.
- [22] Lewis, R. E., & Heckman, R. J. (2006). Talent management: A critical review. *Human resource management review*, 16(2), 139-154.
- [23] Londhe, A. (2018). Suggested Readings on Neuroscience and Its Application in HR. *NHRD Network Journal*, 11(4), 100-103.
- [24] Martineau, J. T., & Racine, E. (Eds.). (2019). *Organizational Neuroethics: Reflections on the Contributions of Neuroscience to Management Theories and Business Practices*. Springer Nature.
- [25] Ng, B. (2018). The neuroscience of growth mindset and intrinsic motivation. *Brain sciences*, 8(2), 20.
- [26] Pillay S. (2016). The Power of Unconscious Learning [online]. Retrieved from <https://www.linkedin.com/pulse/power-unconscious-learning-srinivasan-pillay/> [Accessed 8 June 2020]
- [27] Pfeffer, J., & Sutton, R. I. (2006). *Hard facts, dangerous half-truths, and total nonsense: Profiting from evidence-based management*. Harvard Business Press.
- [28] Prester G. (2015). Push vs. Pull Learning [online]. Retrieved from: <https://www.linkedin.com/pulse/push-vs-pull-learning-gus-prester/> [Accessed 10 June 2020]
- [29] Rock, D., & Schwartz, J. (2006). A brain-based approach to coaching. *International Journal of Coaching in Organizations*, 4(2), 32-43.
- [30] Rock, D. (2008). SCARF: A brain-based model for collaborating with and influencing others. *NeuroLeadership journal*, 1(1), 44-52.
- [31] Rock, D. (2009). The neuroscience of mindfulness. *Psychology Today*, 11.
- [32] Rock, D., & Page, L. J. (2009). *Coaching with the brain in mind: Foundations for practice*. John Wiley & Sons.
- [33] Rock, D., & Larkin, P. (2011). *Quiet leadership: Six steps to transforming performance at work*. Harper Collins Publishers.
- [34] Rock, D. (2010). *The neuroscience of leadership* (Doctoral dissertation, Middlesex University).
- [35] Rock, D., & Larkin, P. (2011). *Quiet leadership: Six steps to transforming performance at work*. Harper Collins Publishers.
- [36] Schoemaker, P.J., Heaton, S., & Teece, D. (2018). Innovation, dynamic capabilities, and leadership. *California Management Review*, 61(1): 15-42.
- [37] Sliter, K. A. (2015). Assessing 21st century skills: Competency modeling to the rescue. *Industrial and Organizational Psychology*, 8(2), 284-289.
- [38] Sloman, C., Simmons, J., & Cantrell, S.M. (2015). Talent Management Meets the Science of Human Behavior [online]. Retrieved from https://www.accenture.com/t20150523t054016__w_/us-en/_acnmedia/accenture/conversion-assets/dotcom/documents/global/pdf/strategy_6/accnture-talent-management-meets-science-human-behavior.pdf [Accessed 10 June 2020]
- [39] Tansley, C. (2011). What do we mean by the term "talent" in talent management? *Industrial and Commercial Training*, 43(5), 266-274.
- [40] Thunnissen, M., & Buttiens, D. (2017). Talent management in public sector organizations: A study on the impact of contextual factors on the TM approach in Flemish and Dutch public sector organizations. *Public Personnel Management*, 46(4), 391-418.
- [41] Ulrich D., (2007). The Talent Trifecta [online]. Retrieved from <https://www.workforce.com/news/the-talent-trifecta> [Accessed 10 June 2020]
- [42] Ulrich, D., & Dulebohn, J. H. (2015). Are we there yet? What's next for HR?. *Human Resource Management Review*, 25(2), 188-204.
- [43] Wuim-Pam, B. (2014). Employee core competencies for effective talent management. *Human Resource Management Research*, 4(3): 49-55.
- [44] Zak, P. J. (2017). The neuroscience of trust. *Harvard Business Review*, 95(1), 84-90.