White Paper

“Managing Supply Chain in a VUCA world”
ACKNOWLEDGEMENTS

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For the 27th consecutive year, KEDGE Business School Global Supply Chain Management Programme, ISLI, organizes and hosts the Supply Chain Forum. Unique meeting place and crossroad for ideas and discussions on the evolution of the supply chain, the Forum gathers every year more than 300 international supply chain leaders.

New challenges, technology evolutions, new consumptions models are on the rise. Supply chain leaders have to innovate constantly to face these issues.

This year, the Supply Chain Forum offers to discuss these challenges around 5 round tables animated by high profile supply chain leaders on the following themes:

1. Managing the Supply Chain in a VUCA world
2. Smart & Digitalized Supply Chain
3. End-to-end Supply Chain
4. Omni-Channel Supply Chain
5. Sustainable Supply Chain

The discussion and a summary of the proposed solutions will be grouped together in a White Paper so that each participant can keep some of the elements of the discussion around the main question that we are proposing this year: How to collaborate, perform, evolve, now?

White paper

“Managing the Supply Chain in a VUCA world”
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Executive Summary

Life, from a personal perspective, can be considered as a continuous series of hazards, which cannot be foreseen, things can get complex and decisions outcome is dominated by ambiguity and uncertainty. Still every single human being is striving to find a balance and conduct a normal yet fruitful life.

In a corporate world, the chain of conducting this life can get more complex than on the personal one, especially that the world has changed, since the financial crisis, there has been increased awareness about the globally interconnected world of business, its volatility, uncertainty, complexity and ambiguity. Some would believe that its unpredictable and situations change rapidly which is resulting in the obsolescence of existing models dealing with various issues.

Whether it is a maturing or declining markets, they are all making enterprises more focused on new business or market opportunities – wherever they are in the world –. However, in today’s business environment, extreme levels of market volatility tend to impact the globalization of business operations, making every business constituency struggles to survive in a world dominated by VUCA (Volatility, Uncertainty, Complexity and Ambiguity) which is considered as today’s acronym that had shaped the functioning of Supply Chains by pushing companies to adjust their focus to adapt to the challenges that might face them.

This white paper is addressed to dispatch the thick packaging over the VUCA issues, and filter it into many layers spotting light on different concerns companies have. We highlighted different scopes of VUCA and draw a thick line to link it with the leadership development through a deep analysis of the VUCA prime. Lastly the optimal and ultimate goal that each and every company is aiming to is to address VUCA with agility, which is the reason we identified key strategies to build agility.
Overview

What is VUCA?

VUCA, originally, acronym invented by the US military, the objective of such an approach was to ensure national security while avoiding exposing military contingents, nationals and civilian populations to conflicts on the ground. The intervention must be as fast as targeted in order to avoid the risks of collapse and collateral damage. The opponents are multiple and their face is little or sometimes even unknown, even virtual. Army forces must therefore deploy new attack techniques that can no longer rely solely on traditional military ploys, but must be rapidly developed to respond to a specific situation. (Hicksan, 2010)

This approach is probably one of the best syntheses in four letters to summarize the world in which organizations are to be realized today: Volatility, Uncertainty, Complexity, and Ambiguity.

The volatility defines the inconstancy of situations that may evolve quickly and unpredictably. The situation must be read in a dynamic way and decisions adjusted according to the circumstances.

The uncertainty is a characteristic of situations in where companies cannot predict the expected unguaranteed results, and possible surprises can disturb the whole market environment such as the emergence of an unexpected competitor, a technological breakthrough or a political decision, normative, regulatory, etc. which alters the environment or rules abruptly and unexpectedly.

The complexity refers to the growing number of interactions, often dynamic, components of a system, of a market, sector of activity. It is the chaos and the confusion of the battles in which the evolutions of situations are rapid to the point of making them difficult to understand.

The ambiguity refers to the difficulty of distinguishing without risk of error situations, relationships of cause and effect, or the meaning of regulatory and normative texts that can be interpreted in different ways. (Kingery, 2015)
Below is the VUCA Matrix that was developed by researchers in Harvard business review as the summary of the whole approach:

![VUCA Diagram](Bennett & Lemoine, 2014)

### The Scope of VUCA

Projects become volatile, priorities and strategies change rapidly and medium-term visibility is not only uncertain, it becomes unknown, also the complexity of interactions, influencing factors and actors is the norm of the business environment, and ambiguity is now the rule and not the exception.

In an economic environment that has become VUCA, uncertainty is not a problem to be controlled, but a lever for innovation and performance. Which makes VUCA on one hand a threat because it hinders the flow of work within a company, or an opportunity to redesign the supply chain and keep up with the changing environment.

The business world nowadays is driven by change, unpredictable events, and exponential increase in the number of theoretical alternatives which are impossible to implement because of the complexity of execution. Which creates a sort of ambiguity for leaders.
about taking fast future actions plans, since all work processes are more interconnected than ever before.

This interconnectivity lead to the interrelation between the components of VUCA, in a way that if a business suffers from one, it will automatically integrate another one within its challenges.
The correlation between the challenges that VUCA creates for a company can be summarized as follow:

![Figure 2: VUCA component interrelation, own contribution](Image)

Volatility can be defined as the instability of the business environment which is boosted by the increases of several market drivers, which results market uncertainty, because leaders have a blurry vision about what is going to happen next, which means all the future is unpredictable and unforeseen.
Concerning Complexity, it is highlighted by the confusion the market causes to leaders, in where they have a fuzzy vision about the causes and effects affecting all companies. Complexity causes a lack of precision which leads to ambiguity which means that there are different meanings to the work environment conditions, at this point, it can be the interrelation between complexity and ambiguity happens. (Bennett & Lemoine, 2014).

Speaking of VUCA as an opportunity, it can be considered a door to access to new business models, because it is a key for a company to adapt and react, hence it allow to come out of the challenging game they are playing in the market. Some companies such as Zara or Netflix have even integrated it into their overall strategic approach. Thus Zara proposes a new collection of clothes each week in response to consumer volatility and uncertainty in consumption trends. Netflix uses its customer data to produce the scenarios of the series (such as House of cards) that it offers for rent. (Bouée.CE, 2014)
Business models will therefore have to integrate a greater degree of uncertainty and reactivity.

Three main axes should be recurrent:

- Technology
- Organizational agility
- Collaborative model

It is therefore on these new areas of competence that the future managers will have to make their apprenticeship. The training will then have to diversify their approach or even modify it in depth. But in a VUCA, nothing is acquired -even in the field of training- to respond to new markets.
FINDINGS

VUCA Prime & Leadership

VUCA isn’t just an acronym used to describe the business world challenges and fluctuations, it extended more to tackle the major management issues.

VUCA prime model (Johansen, 2007) was developed to link each and every component of VUCA to another managerial issue. It was developed as follow:

VUCA Prime, links volatility to vision, because it sees it as being more cardinal in rough and blustery times. The key to a sustainable and healthy strategic goal and result is a clear vision that all leaders within a company must have, the ability to foresee the volatile environment fluctuations as economic instability or even the expansion of the market pool which is highlighted by the entry of new competitors. The clear vision consists mainly of keeping the whole company in mind while taking decisions and deploying new strategies to implement. The VUCA world requires anticipating the consequences of the solutions and actions carried out, analyzing diverse and divergent variables that hide the new market opportunities. Which requires a clear vision. (Kishore & Ara, 2014)

Uncertainty on the other hand can be offset with understanding, that is reinforced by greater accessibility to information, which is difficult to analyze, and by the evolution of new technologies, which make it difficult for companies to position themselves in the markets. Each strategic decision is thus subject to the vagaries of the economic, legal,
social, regulatory, political and natural environment. which draws the attention over the ability of a leader to stop, observe and listen carefully to the characteristics at play. What is key to efficiency and effectiveness in a VUCA world, is the deep contemplation and being keen to everything that goes beyond their areas of expertise and core competencies to broaden their vision spectrum which stand in need of an effective upward and downward communication between the leaders and all the hierarchical layers of the company, to facilitate the circulation of the information and helps into building teams and work within a collaborative framework.

**Complexity** is obviated with **clarity**, which consists of making sense of the mess and chaos. A method that leaders should follow to keep up with the quick pace of change and respond to weak signals occuring in the environment, through identifying possible business solutions to implement and take action without harming the company’s well established entities. Uncertainty will lead them to be more attentive, which means changes in management patterns. Leaders will have to be able to ask, listen and watch while being surrounded by collaborators with innovative ideas, able to modify their proposals according to fluctuations both internal and external to the company.

Al Last, **ambiguity** can be countered with **agility**, aiming for a safe fail which requires the ability to communicate across the organization and to move quickly to apply solutions (Kinsinger and Walch, 2012). The agility basically means the fast paradigm and flow of actions including all the criticism it generates. The leaders will have to be adaptable, both in the reorientations that will be necessary but also in their capacity to take hold with new groups and networks. In this small game, the networks are an asset to understand external partners caracterized by their ambiguity. (Manders, 2014)

Note that vision, understanding, clarity, and agility are not mutually exclusive in the VUCA prime. Rather, they are intertwined elements that help managers become stronger VUCA leaders, so it is necessary for them to be able to develop new strategies on the short term to address to the VUCA phenomena. (Kirk, 2013).

**VUCA Evaluation Index and Matrix**

It is difficult for companies to determine the level of VUCA challenges, they will have to face in their environment.

An index was developed with collaboration of Mr. Fabien Peyrol, a researcher at Kedge Business School, in a way, that an indicator will be given to each and every component of VUCA in order to be able to measure its levels. The Evaluation index developed, allow managers to determine the level of each VUCA challenge within their company, to detect where the turmoil happens, and also determine their position in the market in opposition to its main rivals. Then, they can easily report
the score in the VUCA matrix, to have a graphical view about the current situation of their organization.

- **Example**

A company XYZ, wanted to do a comparative analysis and determine its situation against its competitors, thereby it has mapped all its activities and processes, and found out that it suffers from various VUCA issues:

![VUCA Matrix](image)

On a scale of 5, the company will be able to give a point to each of the indicators according to its market experience, then will be reported in the VUCA Evaluation Index, to generate a final weightage for each VUCA challenge it suffers from, as shown in the table below.

![VUCA Evaluation Index](image)

**Table 1: VUCA Evaluation Index, own contribution**
The company XYZ, figured out that it suffers from 60% of volatility, 80% of uncertainty, 100% of complexity and 40% of ambiguity.

The next step is to report the outcome of the VUCA Evaluation Index, to the VUCA Matrix, as shown below.

The graphical representation derived from the Matrix, permits the company to get an idea about its situation and benchmark itself with its competitors.

This tool was developed, to measure the level of challenge that each company deals with and establish an accurate and proper benchmark.

**Solutions**

**Agility & Resilience**

In a VUCA world, companies struggle to survive with adapting their strategies and tactics and adjusting it against those challenges with agility.

The Agile Model is an analysis developed in 2002 from multidisciplinary survey tackling many facets of the company such as manufacturing, psychology, management, etc. The
model is stratifying between different layers of the company, people, processes, technology, etc. (Horney, 2010)

The Model relies on five main flexible, fast and focused factors, as listed below:

- **Ability to anticipate change**
  The company should create and build absolute clarity on the core value proposition and understand the drivers of change through the creation of efficient systems for all the processes to monitor the performance and identify new trends and patterns.

- **Generate confidence**
  Connect the contribution level of all stakeholders to the company’s success, as well as identifying the level of alignment between the vision, value, priorities and actions, and also engage the operational level and capacity matching the effort generated from stakeholders.

- **Initiate action**
  Provide the engine and the system to allow actions to happen proactively and in a responsive way, within different layers of the organization, while creating the capability for a quick and effective decision making.

- **Evaluate risk**
  Set the priorities of the company to determine the goal to be achieved, and place focus on the feedback system of the company to ensure a successful communication with the stakeholders about the success factors to continuously adapt to.

- **Liberate thinking**
  Deploy innovation within the company to establish an understanding of customers to allow a business to offer the compatible solutions that matches the needs, while taking into account the security of the innovation deployed.

**Digital supply Chain**

Nowadays, Supply chain management has many external drivers for change. In addition to the empowered customers, whose awareness reached the peak and imposed on companies to kneel down to their demand because of the excess information disposed by
them. Which made companies carry a lot of pressure on their shoulders when considering the fluctuation of customers’ loyalty. (Christodoulou, 2008).

Another change driving SC, is the Globalization phenomena which imposes not only a digitalization of the daily transactions or the operational level of the company, but the whole process with the use of various tools such as RFID, EDI, ERP...etc. Delivering the right product to the right customer at the right moment and at the right place, while reducing the cost is the supply chain management mission, but during this process, a company always finds itself stuck facing VUCA instead of resuming its initial mission. Which causes turbulence in terms of process flow. Digital supply chain had evolved to fix the issues and avoid the obstacles that VUCA put to hinder the healthy flow of a company, with the incorporation of technology within its different layers. (Cudahy, 2016).

Companies struggle now to implement digital supply chain as it’s the optimal solution to face the challenging environment they are operating in, and believe that this implementation will help them influence positively or negatively each and every challenge of VUCA as follow: (Schmidt, 2015)

**Volatility:** With keeping up with the fast changing technology in the market place, such as the implementation of Click and Collect, which usually starts with the trial and then ends up by a boost in accuracy and forecasts of the companies, forcing them to stop the experiment and deploy a proper supply chain infrastructure needed to support the increasing and predictable demand.

**Uncertainty:** The implementation and execution of Digital Supply Chain, provides companies with real time data feeds for current and potential physical movement, which enhances on a better decision making process. (Sucharita, 2016)

**Complexity:** Digital Supply chain management is customer oriented, it puts him in the center of its functions, and it can integrate customers, front office, supply chain operations and ultimately understand the end user behaviour and operations with the use of IoT (Internet of Things). But on the other hand, it can increase the complexity within the company’s different layers, such as the operational complexity because of the integration of many complex tools. Supply chain complexity consists a broad awareness about the whole external and internal situation of the company, which digital supply chain provides by connecting the company to everything revolving around it in real time to avoiding any information gaps. (Sucharita, 2016)

**Ambiguity:** Since Digital supply chain is the key consumer of IoT (Eddy, 2016), which challenges the supply chain to open up to new business models and operational possibilities. This helps the company to face the unknown by using advanced technology to determine the causal relationships the business is going through, because digital supply chain makes the supply chain more responsive thanks to the full and superior
collaboration and communication across digital platforms which leads to an improved accuracy, agility, efficiency and effectiveness.

**Omni Channel**

Omni Channel supply chain can be defined as a new model of customer relationship, as the company uses all of the existing channels and new technologies to eliminate all the barriers to reach and fully satisfy the customer and highlights the customer experience by respecting the value proposition promised by the company in the first place. (Kourimsky & van den Berk, 2014).

**Volatility:** Omni Channel supply chain can adapt to each and every customer its serving, making sure that it drives the company on a straight path without any hinders and obstacles, which bounds the company to its market share in a positive way, hence, enhance on its competitiveness.

**Uncertainty:** The technological and online routes Omni channel supply chain uses, helps into mitigating the risk of customer behaviour volatility (whether its demand, or even switching power), through its emphasis on customer experience on one hand, and the company’s stock availability on the other hand. Omni channel supply chain balances the company’s assets with the customer's demand.

**Complexity:** Omni channel is a double edged sword, it can eliminates all the unnecessary layers hindering a full satisfaction of the customer by the use of e-commerce and virtual routes to establish a direct relationship with the end user, hence increasing the service level. But also, its can increase the complexity, such as the order fulfilment complexity, since Omni channel strategy uses different routes to reach the end user, so the company will find itself struggling with the management of the multiple channels it uses.

**Ambiguity:** Omni channel strategy helps in determining actions plans but it can be inferred that it cannot face ambiguity in general, because of the fact that it increases complexity in the company’s environment.

**End to end supply chain**

Literally, End to end supply chain is a process of eliminating as many middlemen and intermediaries between a supplier and the end user, to establish a direct contact point between them. But in the real world, some supply chains have become more dispersed and fragmented, which is illustrated by the number of tiers relating between suppliers and the end user, through a focal company. Nevertheless, some other companies still opt for the end-to-end process of work. (Srai & Paul, 2008).

This helps into facing VUCA in the following way: (Srai, 2013)
**Volatility:** End to End supply chain connects all the activities to create flows to decrease lead times and improve working capital, while reducing inventory, it also helps in increasing revenues and working capital, in addition to reducing operating costs along with lead times.

**Uncertainty:** End to End supply chain eliminates the doubts and uncertainties occurring in the chain because it ensures the effective communication across all its layers.

**Complexity:** End to End supply chain ensures a supply chain stability through standardization, and flow implementation which reduces complexity.

**Ambiguity:** End to End supply chain helps into facing the changing business environment due to high volume and low margin products, thanks to its real time processes. (Srai & Gregory, 2008)

**Sustainable Supply Chain**

If Omni channel, digital and end to end supply chain are customer centric, then sustainable one is environment oriented. Nevertheless, some scholars suggested that its role and emphasis extends to cost reduction and financial performances. (Kell & Cramer, 2010).

If Sustainable supply chain is to face VUCA, it will does so as follow: (Nelson, 2016).

**Volatility:** Projects and strategies that companies are executing, change rapidly in an attempt to adapt to the volatility of situation, that’s why companies runs to being socially responsible and take into account ethics and environment to have a broad picture about the market a company is operating in.

**Uncertainty:** Volatility and uncertainty have strong correlation, then when a company implements sustainable supply chain to face volatility, it directly faces uncertainty.

**Complexity:** The complexity is increasing due to multiplication of interactions and the acceleration of cycles. New influencing factors are emerging such as environmental or societal constraints, ethics or new players.

**Ambiguity:** Ambiguity is frequently the result of the unknown and unpublished, having no antecedents to which to refer, one knows not too connect the observed effects, with certain causes. This is the case for the launch of innovative products or services, which had never existed before, or the penetration of unknown markets.
Employee Selection Framework

Few companies considered the Human resources management when we talk about VUCA World. They focused on many others practices to tend to achieve their result and survive. We can say that the core elements of VUCA is the human power for the design-thinking and creativity. It is important for leaders to select the best people and create a workplace environment that support and enable employee to achieve their great mission.

The following example: quality of life at workplace, Talent management and KESHAVA framework are some of the tools for human resources management in VUCA.

Quality of life at workplace

- **Multi-tasking** - the accuracy, quality and consistency of work being produced is important to increase productivity and efficiency. In VUCA World, The Uncertainty of the environment make thing more difficult and complexes. So, having a team capable to do different tasks and adapt is crucial.

- **Creativity** – A mistake can become an opportunity of learning. Organisation must test and validate new thinking and brainstorming. Encourage and support people to explore new tools for problem solving.

- **Environment** – Insight and inspiration can come from the most unexpected places. Companies must promote workforce respect, organic community, collaboration, team working spirit, communication and personal development to build a peaceful working atmosphere.

- **Humanity, Collaboration and Community** – The employees in the organization must all shared values such as Kindness, respect, gentleness or ethic. Knowing that VUCA acronym comes from the Army, it is necessary to remember that we all need to work together as one to face the unknown and overcome the challenges.

Talent Management

Based on “The New Normal for Talent Management and Workforce Planning” by Dr. John Sullivan (2012). Many Talent fail to perform in VUCA World because they were not designed to more predictable times. So, the problem is how organization can hire talent and develop people in the volatile environment where literally everything changes in months rather than years. Among many actions, here are some that talent management leaders must take to prepare for disruptive problems and opportunities that cannot be predicted:

- Agile employee, those who have the capability of acting effectively in unforeseen and unpredicted situation.
- Agile process, flexibility and rapid change capability.
• Rapid learning, develop systems to increase the speed of individual and organizational learning.

Competitive advantage, develop talent management processes and programs that provide a continual competitive advantage over other talent competitors.
More internal movement, develop process to proactively speed up the movement of employees internally where they can have a greater impact.
Training to solve unanticipated problems, training and development must create the capability to prepare employees and managers to identify and effectively handle previously unknown problems.

*KESHAVA framework and Employee Selection*

To be efficient and effective in VUCA World, companies need to have strong selection processes. The people hired to perform in this environment must have some important skills and knowledges. Dr. Ajith P, Assistant Professor at KIIT University in India propose a selection process named “KESHAVA-Holistic Employee Selection Framework in the VUCA World”. To help companies choose the right employee to perform and adapt in a VUCA World. The holistic KESHAVA framework consist of seven key qualities; Knowledge, Emotional Intelligence, Skill, Hard-work, Attitude, Values and Ambitions that need to be explore.

• **Knowledge**: It is the first component of the KESHAVA framework. Knowledge is the key success in a VUCA World, people should be able to innovate, create and solve problem but it cannot be possible without knowledges. Knowledge is a familiarity, awareness or understanding of someone or something, such as facts, information, description, or skills, which is acquired through experience or education by perceiving, discovering and learning.

• **Emotional Intelligence**: Is the second component and it is the employee’s ability to express emotions like laughter, joy, happiness, wonder, interest and thereby ensure positive service climate within the company (Paninchuknnath, 2008). Goleman broadened Mayer’s and Salovey’s four branch system to incorporate five essential elements or Emotional Intelligence; Emotional self-awareness, Self-regulation, Motivation, Empathy and Social skills.

• **Skill**: It is the third component and it is the learning ability to carry out task with pre-determined results often within a given amount of time energy, or both. Here is some of the knowledge, skills, work habits, and character traits commonly associated with the 21st century skills:

<table>
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<tr>
<th>Critical thinking</th>
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<td>Creativity</td>
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<td>Perseverance</td>
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<td>Leadership</td>
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<td>Information and Communication</td>
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**Table 2: List of Skills required, Abbott, 2014**

- **Ethical**
- **Economic and financial**
- **Scientific literacy**
- **Environment and conservation literacy**
- **Health and wellness**

- **Hard-work**: It is the fourth component; it is difficult to see that during interview stage but you can have a look at past achievement. Hardworking is a quality needed to survive in a VUCA World. Some people only associate long hours of working with good working, but smart work can lead to a better result because it is prioritizing, be creative and complete work in time or before time with effectiveness and efficiency.

- **Attitude**: it is the fifth component and positive attitude manifests in the employee in the form of positive, constructive and creative thinking, optimism, motivation, and energy to do things and accomplish goals. But negative attitude restraint them from developing and using the skills they must add value to the company.

- **Values**: it is the sixth component, according to the (AMA) values represent the collective conception of what people find desirable, important and morally proper. Values such as; Honesty, Responsibility, Fairness, Respect, Transparency, Citizenship should be find in employee working in a VUCA world.

- **Ambition**: it is the seven and last component of the KESHAVA framework, there should be an internal motivation and a strong drive to achieve high professional standards and excellence. The employee should have a passion for internal reason that go beyond money and status which are external rewards.

**Supply chain complexity drivers**

Supply chain (SC) is the sequence of processes involved in the production and distribution of commodity upstream and downstream flows of products and/or services (Beamon 1998; Lambert 1998; Mentzer 2001). The aim of managing this chain is to reduce costs, improving customer satisfaction and gaining competitive advantage. A Supply Chain driver is any property of Supply Chain that increase its complexity. The drivers are classified internally with the product, organization and externally with market, environment (Mason-Jones & Towill 1998; Wildeman 2000). Internal factors are generated by decision and factors within the organization and external factors are generated by environmental factors, regulations and market trends. The Supply Chain complexity is one of the
challenges faces by companies in the VUCA (Vulnerability, Uncertainty, Complexity, Ambiguity) World. The purpose of this paper is to identify some internal and external complexity drivers and propose strategic solutions.

**Internal drivers**

Product type variety, the objective of all companies has been to always satisfy the different customers. Offering a wide variety of products could be a real advantage for the companies, but having the appropriate quantity of each range of product can become a complex task. If the company has a high number and variety of SKU’s. To find SCM solutions, they must improve the logistics management capabilities, demand management and forecasting (Towill 1999). Or it is also possible to offer a limited range of products to reduce the complexity. In terms of product complexity, companies can redesign products with high complexity index or measured the product complexity on the supply chain impacts.

Technology, there are high variety of requirements that need to be met by IT. A Company must implement and customized Software as a service logistics solution. Develop a new planning system and new performance metrics to deal with incapable and incompatible planning systems. And they can also implement a Supply Chain planning software modified to handle planning requirement. With the fast technology development, they should adopt new technology, processes and integrate an ERP system.

Organizational Strategies, constitute one of the most complex internal drivers of a Supply Chain. The organization’s strategies determine how they use and implement best practices to face VUCA. If they have a lack of control over processes, they must automate decision making process using a business rules management system. They can form a partnership with a partner that has the know-how and outsourcing the operations to a partner that has the experience to deal with the lack of experience and know how in some market place. The organization must gain visibility into operations through B2B platform...
when outsourcing of manufacturing. It is important for companies to build collaboration and relationship based on trust with the different actors involved. They can design a map to have a visibility downstream and upstream of the business. They should set mostly short term strategies to quickly redesign and adapt the organization to the new world.

**External drivers**

Market/Demand, is the most complex drivers. The demand uncertainty and volatility can be managed by planning daily operations and profiling uncertain demand. The Manager needs to evaluate, changing market condition, decide on new product, production technologies and so forth. The market behaviour is so unpredictable that handle this complexity is a key ingredient of successful management. Forecasting is still necessary when it comes to demand prevision, based on historical demand or seasonality. Be aware of the competitor’s actions and innovations. Always analysing and updating the new customer requirement and considered the changing workforce expectations.

Geopolitical, the laws, regulations and standards are different from countries or regions all over the world. Companies that want to outsource abroad must manage this complexity. They can build a partnership with other companies in the countries they want to develop. Perfectly knowing the business processes of that country, investing by creating jobs and promoting high value such as respect and ethic to manage the cultural differences.

Environmental volatility, the elements with which organization works are quite dynamic, they changed all the times and it is difficult to predict the rate of change. Environment volatility involved many factors like market, industries, government, financial and economic conditions, human resources and technology. We usually see the environmental volatility as a threat, but if it’s become an opportunity for the organization? “We have to change to survive” (Jordon, 1940). The problem is not the environment; it is the way organization react. Google has bought YouTube to cope with its giant competitors and Oracle has bought Sun to empower itself in the face of IBM. A Volatile environment gives the opportunity for business to change their structure and strategy. It is impossible for traditional companies to implement a temporary system, which allows the organization to respond quickly to threats. The progress of the technological information is a great opportunity for organizations to spread itself and wisely use the technologies to be more efficient and effective.

To develop the right strategies to deal with complexity, managers need to analyse and understand the complexity drivers. They must elaborate effective way of elaborating good strategies. A good strategy is defined as “any proven working practice which is far enough ahead of the norm to provide significant performance gains if implemented” (Zairi and Whymark, 2000). We can also deal with complexity while using static complexity where companies tend to use strategies to reduce the complexity. Also, Dynamic and decision making complexity to manage the complexity and adapt to their operations to cope with it. The solutions that have been implemented in a different case to overcome the complexity related to some problems (Seda-Asan, 2012).
Shared service center

VUCA World, is an environment where all organizations must survive, develop and achieve their goals despite all the challenges. Shared services are similar to collaboration; it is taking place between different organizations. Development of a shared-service organization (SSO) within a company is an attempt to reduce costs and standardized processes.

According to PricewaterhouseCoopers (2008) “How to design a shared center that works” we have three operating models;

**The centralized approach:** all business-support services are concentrated in a single center. This center provides services to the company’s operations throughout the region, improve visibility and reduce complexity of the network.

**The centers-of-excellence:** specific business processes are in different locales based on a company’s strongest concentration of experience. This model helps companies perfectly known their market throughout their experiences and better face the risks.

**The regional cluster approach:** in this model shared services are provided on a region-by-region basis. This model help reduces the risk, quickly make the changes and re-adapt the processes if needed.

Large global company relies on employees to provide services that keep the organization running. In the past decade, shared service centers have become a big function expect from any team presided over by a senior manager. The prime motivation has always been costly, but today, with VUCA, it can confer other advantages. Struhar (2015) demonstrated through the figure below, that there are three different ways in which shared services organizations provide value.

![Figure 5: Types of value for shared services, Struhar, 2015](image)

**Reliability:** Shared services add primarily value by delivering reliable services at a competitive price. It means that customer trust and depend on them. In an uncertain market place, the company will build a strong reputation while improving productivity and
standardization. Value added by meeting customer needs at a competitive cost while minimizing risks and losses

**Simplification:** for example, when integrating a newly-acquired business unit or expanding into a new county, shared services teams will help or hinder by how complex they make the processes and policies that need to be followed. Or when hiring manager on board new employees, it can make things much easier by taking control of the process: coordinating with IT, HR and Finance. Value added by assuring efficient customer service.

**Insight:** For example, the sales analysis team identifies an underserved market segment that is too small to warrant visits from the sales team. Shared services suggest the creation of an insight sales team to call on this group of prospects. Value added by analysing data to increase revenue and decrease cost.

Shared services center, can be a good tool to face VUCA because it first help you reduce your cost and increase profit. But on the other hand, the effort is well divided and assumed by one team it reduces the complexity of the processes, increase the knowledge to better deals with the unknown and be more reactive in front of the uncertainty.
COMPANIES’ SPOTLIGHT

THE FAILURE OF NOKIA

Nokia has been one of the most valuable mobile company in the world. Started off as a forestry and paper product company in the nineteenth century. Moved into rubber, cables and electronics, Nokia started focusing on mobiles in the 1980s and achieved great success.

What happened to Nokia is no secret, they have been crushed by Apple and Android. The company fails to innovate and thought that would be strong in front of the new generation.

The reaction in 2007 to the Android revolution “We don’t see this as a threat. We are the ones with real phones, real phone platforms and a wealth of volume build up over years,” shows too much complacency and an underestimation of low cost rivals. (Brahma, 2015).

Nokia appeared to be distracted by Microsoft entry to mobile telephony and missed to innovate with small players as colour screen and ‘clam-shell’ design for smaller products.

Nokia failed to recognize the increasing importance of software and underestimated how important the transition to smartphone would be. The other problem of NOKIA was the leadership, “The chief executive officer’s (CEO) speech at the Nokia Annual General Body Meeting on the 3 May 2011, outlined the problems and mentioned the tough measures being taken in a transparent manner, but did not hole out any vision. Stephen Elop’s did end the speech saying that they felt very optimistic during this moment of disruption but he did not provide any direction. (Brahma, 2015)

The Volatility of the demand, the Uncertainty of the future, the fails to build up adequate resources to address the Complexity and the Ambiguity of the meaning of the event killed NOKIA.
Kellogg is a company which operates in the agricultural sector, which makes VUCA a permanent disease for the company.

The main VUCA challenges faced by KELLOGG, are as follow (O’Marah, 2016):

**Political Instability:** The socio-economic balance had suffered from a serious unbalance, caused by the political quarrels in countries and Brexit in the United Kingdom which affected the international trade and led to serious volatility. The mentioned drivers affected the sourcing policies and sustainability field of KELLOGG.

**Climate Change:** The agricultural sector suffers heavily from climate fluctuations, that’s why the company need first to predict how most affected regions will be affected by each natural disaster that might happen, since their suppliers are farmers accounting for an important portion of their activities, which made KELLOGG simplify the work across thousands of supply chain employees to stabilize a supplier base comprising more than 1600 sources from 20 countries.

**Food Security:** The Company should make sure that every community it serves, have easy access to food and nourishment on a regular basis.

**Urbanisation:** The growing urban population will increase the demand, which will cause the challenge of lack of water, this will put KELLOGG in the position of using their capacity to satisfy the maximum demands possible. Since the company has a strong sustainability agenda around productivity processes.

Not only this, but as Kevin O’Marah (2016) quoted: “The essence of dealing with a VUCA world in KELLOGG is to find ways to accommodate turmoil with agility”.

The company included also in its VUCA plan, the marketing vision, since the social media had magnified every screen, including false accusation about the company and spreading bad rumours which ruins the company’s brand image in the market.

Situations like these leads to inaccuracy and uncertainty in demand planning in a negative way, and it also harm the customer retention strategy of the company.
CONCLUSION

VUCA is a challenging environment where businesses struggle to achieve supply chain flexibility and resilience. Even with agility, finding the perfect strategic fit between their strategies and tactics as a response to the issues faced is a challenge.

The strategic fit can be achieved only if the company first understands supply chain volatility, uncertainty, complexity and ambiguity, from a market point of view so that the traditional questions on the quantity of products needed to be produced, the response time the customers will tolerate, etc. are clarified. The company should then define a suitable strategy according to their policy and goals, whether it should opt for cost efficiency strategy consisting of minimizing the costs of all processes needed such as manufacturing costs and distribution one, or a responsive one, which consists of how fast can a company meets its demand while maintaining a high service level.

Companies need to keep into consideration the industry they are operating in while remapping their supply chain to check the AS-IS situation and detect where the turmoil happens. The outcome of the whole analysis should deploy a supply chain re-design accordingly with the company’s policies and targets.

The questions that is left to solve is what factors do a company needs to take into consideration while redesigning their supply chain?
EXECUTIVE INSIGHTS

Bernard Milian, Consultant, Agilea Consultancy

1. *Is the VUCA World a threat or an opportunity in your opinion?*

First of all, any company must realize that the VUCA world is today’s reality – the “New Normal” in which companies operate. If you ignore it and do not adapt, you are poised to fail, and you will jeopardize your business. If you fail to adapt, VUCA is definitely a threat. On the other hand, if you are faster and smarter than your competitors to embrace this VUCA environment and focus your teams on implementing a flow based adaptive enterprise, chances are you will outperform. The VUCA World is there. It is up to you to make it a chance or a risk for your company.

2. *What are the criteria For AGILEA (Company)?*

AGILEA is an Education, Consulting and Technology team dedicated to help companies implement agile Supply Chain and Project Management tactics. Agility is core to our DNA. We strongly believe that Adaptive strategies and tactics are necessary for the 21st century supply chains and project management. Being able to adapt to changing market conditions, to innovate and go to market faster is paramount. This is why we have been precursors in France to introduce and promote Demand Driven MRP (DDMRP), and a growing player for Critical Chain Project Management (CCPM) implementations.

3. *You work a lot with DDMRP methods, how could we use it to cope with VUCA?*

DDMRP tactics have been precisely developed to cope with VUCA. If you want to implement rapid and safe response to market conditions changes, DDMRP provides you with a comprehensive and practical framework – from company governance down to shop floor execution. For many years, the leading paradigm for supply chain management was to make an extensive use of technology to tightly synchronize all players of a value chain on evolving demands / forecast. This contributed to several problems:

- Tightly linked supply chains end up very unstable – incurring nervousness and growing bullwhip effects.
- In a VUCA world, forecasts are less and less accurate, and this will keep deteriorating.
- All buffers – be them inventory, time or capacity, were deemed bad – when in fact you need buffers – properly positioned and sized – to adapt to changing conditions, and to dampen variability.
- The technology deployed often ignored the human factors – and therefore many see the planning and execution systems as black boxes, adding self-induced complexity to the VUCA. To cope with complexity, you need signals that are simple to interpret.
4. **Speaking about complexity, what are the main challenges that companies should overcome to simplify?**

The first challenge is relative to data management. Many companies are drowning in an ocean of data, but are struggling to get relevant information out of it, to take proper action. Neither our legacy IT systems nor our financial reporting conventions and processes are designed to cope with the VUCA world. To be effective an adaptive enterprise must focus on the right, flow based metrics, and generate simple to understand signals to drive decision making processes.

In a complex and fast changing world, you need to concentrate on the relevant information, at strategic, tactical and operational time ranges. The Demand Driven Adaptive Enterprise provides the framework to enable this drastic change in company governance.

5. **What are your criteria for agility?**

Sensing changes in demand, and seamlessly adapting planning and execution to react in real time.

6. **As consultant, how do you promote change so that instability becomes a strength?**

The key element to facilitate change is to on board the men and women who are the primary asset of any company. In most companies the teams already face instability, sometimes with anxiety and unclear directions. Education and training is the first step to help everyone realize that instability is normal, and that it can be accommodated effectively by adopting new methods. Once the teams are aligned on this understanding and start implementing demand driven tactics, chances are they will enjoy continuous changes!

7. **When consulting a company, how do you identify opportunities for more agility? What measures are the best in your opinion?**

There are multiple symptoms of a lack of agility: holding too much inventory while experiencing many shortages, planners spending most of their time in firefighting, lead times considered too long by the customers, running huge batch sizes / campaigns, high expediting costs...

From my experience the best measures to mobilize the teams and drive improvements are on time delivery and end to end lead times/inventory turns.
1. **Is the VUCA World a threat or an opportunity in your opinion?**

VUCA World is rather a situation wood Industry must deal with. In one hand, it maintains wood Industry under pressure and gives motivations to reach better performances. In the other hand, it generates a lot of waste and losses, with a major impact on competitiveness and global performance.

2. **Since wood is a material, even raw material, how to cope with the traditional Bullwhip effect and information uncertainty in such a supply chain? Do they use special technologies indicators?**

Bullwhip effect is the major consequence of VUCA. But non-appropriate quality supplies must be also considered as a significant issue.

There is currently no universal formula to deal with Bullwhip effect in the Roundwood supply chain. However, the Industry’s organization provides a natural robustness to the supply network that restrains Bullwhip effect. This network is complex, fragmented and made of diversified companies (from 1 to 500 employees). Thus, customers are supplied through many channels. When a supplier is not reliable, customers can easily find an alternative one. Therefore, the risk is spread over the network, limiting the impacts of Bullwhip effect.

Although the bullwhip effect is restrained by this supply network, it still generates major impacts. Indeed, as companies deal with stocks shortages and overstocks on a daily basis, there are still cost reduction opportunities.

3. **The wood industry was hardly struck by a storm in Aquitaine some years ago. How did they cope with this natural even disaster? Have they recovered?**

The Industry decided to stock huge amounts of Roundwood in underwater conditions to protect wood from decay. This stocking method is really expensive and was mainly supported by State subsidies.

This solution was a way to compensate for direct losses. Nevertheless, it was not sufficient to prevent the emergence of the current resource shortage. Therefore, wood industry has
not recovered yet. Today, purchasing standing timbers is the main issue for wood suppliers. Their recovery strategy mainly consists in waiting for forest growth and in increasing standing timbers purchase prices to be locally more competitive. As a result, local competition is exacerbated and the supply network’s robustness is weakened.

4. **Could they reduce their risks with those impossible predicted events?**

There is no proven method to reduce natural risks but solutions to limit their impacts exist. The first one is to maintain a diversified and fragmented network that guarantees its robustness. Small companies must be preserved with their specific organization providing multiple supply channels. I don’t trust in a wood industry dominated by few very big actors like in others sectors. It will weaken the network.

The second solution is to strengthen the supply chain by encouraging collaborations between parties. Indeed, VUCA is not only linked to natural disasters, but also - mainly - to diverging production flows. One kind of tree will produce up to 10 distinct Roundwood qualities, each dedicated to specific industry processes. One sawmill cannot consume all of these qualities and must share the resource with other consumers. In this system, the absence of collaboration causes waste and uncertainty, and mainly quality uncertainty. Nowadays, sawmills can rarely deploy supplies’ quality control system. Qualities’ mismatching are frequent and discovered too late, once the log is sawn.

In my opinion, wood Industry is highly efficient in production activities. For instance, assessing standing timbers, harvesting, transporting or sawing activities are executed at a high technical level. However, a major weakness of the Industry lies in lack of planning and control, and mostly when activities are exerted with external supply partners.

5. **It takes time to produce wood. How the predictions and forecasts are done to match a 20 to 30 years evolution? Do they have a way to reduce their vulnerability to time?**

Forest growth and wood processing are totally decoupled. The industry takes what is available now. 20 or 30 years forest growth forecasts are not a major issue for most of the companies and uncertainty is not critical for this topic. Uncertainty is in fact critical on these factors:

- Natural disasters
- Diverging production flows without collaboration
- Long delays between the standing wood purchase act and Roundwood delivery to customers (> 6 months)
- A major decoupling point between forest owners and wood industry. Indeed access to adequate standing timbers is really difficult nowadays. Forest owners
push the resource on market regardless of the demand whereas wood industry production is pulled by consumers.

The Industry focuses forecasting activities on this last point. As Roundwood suppliers are between these two stakeholders, they are the most vulnerable in the network as they must continuously forecast customers’ demand to buy efficiently standing timbers to forest owners. In these conditions, standing timbers are often purchased without knowing what will be the market 6 months later, thus generating a lot of risks.

In this condition, mid-qualities trees are particularly sought generating imbalances in the distribution of forest age classes. This a major issue, moreover during shortages as nowadays.

However, the State, research organizations and bigger companies are implied in strategic think tanks that produce forest growth forecasts studies. The State uses these studies to build public policies which will directly impact future forests.

6. **Is the sustainability development issue taken care of in the French wood industry? In comparison to Canada or Scandinavian countries?**

French forest is growing despite of disasters or industry consumption. The sustainability is not really an issue as the system is globally sustainable. Forest structure is not at all the same as in Canada where forest is mainly owned by the State. In Scandinavian countries, each country has its own forest organization (with important areas owned by wood industry itself). Thus, comparisons are difficult.

However, the sustainability question can be asked from the supply chain efficiency point of view. As I answer before, VUCA impacts on supply chain waste and losses are really significant.

In this context, the industry has just started to take care of VUCA, but it is not yet considered as an emergency, even after the 2009 storm and the current shortage. Innovations subsidies are still focused on technologies development, but technologies are not the limiting factors. On the contrary, we should focus on novel business models, encouraging collaboration between supplying stakeholders and thus increasing planning and controlling capacities. The idea is to enhance existing collaboration strategies which stay limited to niches by securing each stakeholder through better contracts and business model.

7. **How can you describe your consultant strategies in terms of VUCA?**

My consultant strategy is dispatched in 3 activities.
- Participating to public territorial studies whose goals are to diagnose the local wood supply chain and build innovations with industry actors and researchers.
- Working directly within the companies to enhance their own supply processes. Most of the time, my tasks consist in building planning and control processes in partnership with their suppliers, customers and contractors. For instance, we try to adapt MRP and CPFR methods to wood supply processes.
- Developing and providing novel technologies that are used to support planning and control processes. We are currently producing “light but rich” applications to optimize the answers to customers’ needs, harvesting sites management, transport planning and risk management. The innovation lies in the adaptation to SME’s organization and in on-field work (with no GSM coverage). These technologies main goal is to control risk and gives capacities to find the most adapted solutions once risks are established.
Bruno MAHE, Global Supply Chain & near east operations director – Danone.

1. **Is the VUCA World a threat or an opportunity in your opinion?**

Definitely an opportunity, with the right mind-set, speed of execution and engagement

2. **What is VUCA in your company and what dimension of VUCA seems the most important for DANONE?**

Countries changing regulation / Accelerated Technology Possibilities / fast evolving Consumer aspirations / Commodity Markets / Globalization

3. **As you are operating in FMCG (Fast Moving Consumer Good) sector, mainly producing fresh products, how do you evaluate and deal with this fluctuation?**

Note: Fresh products represent 50% of our sales, rest is Baby and Mum Nutrition, Water, Medical Nutrition, all ambient.
We focus on people (culture, skills, and ways of working), sustainability and agility

4. **How do you distribute risks to face VUCA?**

By dealing with the risk at its level of uncertainty, local, regional or global. For example with the implementation of Integrated Business Planning at all levels and the design of a flexible Global Footprint Network.

5. **Speaking about complexity with some Supply Chain Directors, they emphasis the necessity of simplifying the whole strategy. Do you agree? And what are the main challenges that your company had to overcome to simplify?**

Engagement of the teams is essential. For this the strategy needs to be clear and simple. The main difficulty is to accept to let go other priorities and to reallocate the resources accordingly. With no compromise.
6. *With your products, how do you face fierce competitors as Nestle for example?*

   Our strength is our speed and the level of engagement of the Danoners.

7. *How do you manage to implement agility for you acquisition, White Wave Foods for example?*
   The acquisition is too recent to give you a comprehensive answer. White Wave have a culture which is very close to Danone, this is making things easier. We listen to each other in implementing the best solution overall.
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