

Successful in the Digitalized World of VUCA: Agility and Breathing Supply Chains

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Brexit is on next week's agenda – or maybe it is not, or just not entirely, or maybe later? By the time this paper is published, we will know. But just imagine the reaction rate that politics have been demanding of the economy. Welcome to the world of VUCA! But what are the challenges we need to master in a world that is characterized by volatility, uncertainty and complexity? What role does digitization, which is probing into all areas of society, play in it? Are there any formulas for success, and how can Oracle Applications help the pursuit of success in the VUCA world? The following elaborations will focus on thoughts concerning the agile business and the planning of breathing supply chains.

The world of VUCA

With the breakup of the Soviet Union at the beginning of the 90s, the acronym VUCA first gained importance. Constructed from the terms volatility, uncertainty, complexity and ambiguity, it described very precisely the multilateral state the world was left in after the end of the Cold War. The fact that VUCA would increasingly enter strategic business management doesn't come as a surprise – as little as the observation that VUCA nowadays is as present as never before (see [BeL14, MKK16]). In a time where even in Europe, populist groupings are egging on democratically elected governments, and political gamblers are picking trade quarrels, incidentally making nuclear wars imaginable again, there is no doubt that all requirements of a VUCA world are met. And when in addition, globally operating megacorporations are seemingly reaching for world domination, immeasurable amounts of capital build their explosive bubbles in the casino economy, and despots seem to be the only ones left still capable of envisioning the future, VUCA becomes omnipresent.

In the first instance, not only responsible business leaders but also citizens consider the VUCA world a threat – and it should be seen as such, while appropriate safety measures should be taken. However, the fact that the VUCA world provides immense opportunities should not be disregarded: prospering new markets replace shrinking or vanishing ones, create new job vacancies and generate capital flows that can ideally be guided into meaningful future projects.

Recognizing chances, using them in a meaningful way and mastering the risks – those are the challenges for all players in the VUCA world, for both politics and economy but also for the individual citizen. This is basically nothing new and applies to all stages of mankind – apart from the fact that in the VUCA world, the pace of change is as fast as it has never been before.

This leads us to the key factors that are important for success in the VUCA world. VUCA is used as an acronym here as well: vision, understanding, clarity and agility. Transferred to strategic business management, success requires a future vision that serves as both a mission statement and motivation for the activities within the company – even in unsteady, uncertain times. In addition, the contexts need to be grasped – the causes and rules which are responsible for the changes, as well as their consequences and risks. Clarity stands for transparent processes and sets of rules as well as clearly formulated goals, strategies and plans. And in the end, agility is indispensable for successful

companies in the VUCA world; the capability of being able to adapt to the changes in a fast and efficient way (see [RSN 19]). This doesn't merely refer to the processes, business rules and IT systems – no, the changes can also affect the product portfolio, manufacturing processes or supply chains, and not seldom cast doubt on the business model itself.

The role of digitization

Thus far, the previous elaborations haven't mentioned digitization. This might come as a surprise, since with its inherent dynamic, digitization is without a doubt an important drive for the changes in the VUCA world. Particularly in the context of the rapid expansion of artificial intelligence technologies, it becomes clear that the changes impelled by digitization can be both positive and negative in nature. But digitization also offers effective opportunities for risk management and the realization of value-adding procedures and processes (cf. [VSD17]).

Practice shows that digitization technologies, which certainly are of significance when it comes to functionality, usability and efficiency in a stable and secure environment, cannot be used adequately in the VUCA world. In such cases, the fault usually lies with the functional, timely and economic weaknesses in adapting to the VUCA-typical changes. Especially the on-premises deployment model needs to be viewed as a limiting factor in many ways, which is why companies have been increasingly replacing it with cloud deployment or hybrid deployment models.

Digitization does not only play a significant role in the context of agility, but also when it comes to creating transparency (understanding and clarity), calculating and evaluating forecasts (predictability), and reducing complexity. The expectations set to digital technologies these days can only be met with the use of artificial intelligence, machine learning and even autonomous systems. The intelligent technologies support the user with knowledge-intensive tasks or even with the takeover of entire areas of responsibility. The results are an increased automation degree and, in total, a higher quality of service and results.

Agility

It is obvious that a high degree of digitization can have positive influence on the agility of a company. However, there is no guarantee for that – instead, it depends on the applied technologies themselves and the extent to which they are suited in supporting the processes of the company and especially having positive influence on adaptation capability. On the other hand, the company needs to be able to adapt to its complex, turbulent and unsafe environment by anticipating these changes as soon as possible and aligning its business model and business processes to it. For the agile company, it is therefore crucial that the principle of agility is realized within the entire company. It won't suffice to execute an agile project every now and then and, apart from that, live in rigid business processes. On the contrary, the principle of agility needs to be embedded deeply in the enterprise architecture, as shown in the left part of Figure 1.

The representation of the enterprise architecture occurs as in [SVO11] and is orientated towards the suggestions of BITKOM (see [BIT11]). Starting with the business model on the highest level on which the business context, goals, strategies and key performance indicators are described, what follows is the business architecture that provides the strategic abilities to implement the business model: business processes, products and services.

The information system architecture (business objects, business services, applications, IT services) in combination with the technical architecture (software, hardware, communication infrastructure) provides the business abilities for the implementation of business strategies. In the agile company, agility expands across all levels of this enterprise architecture.

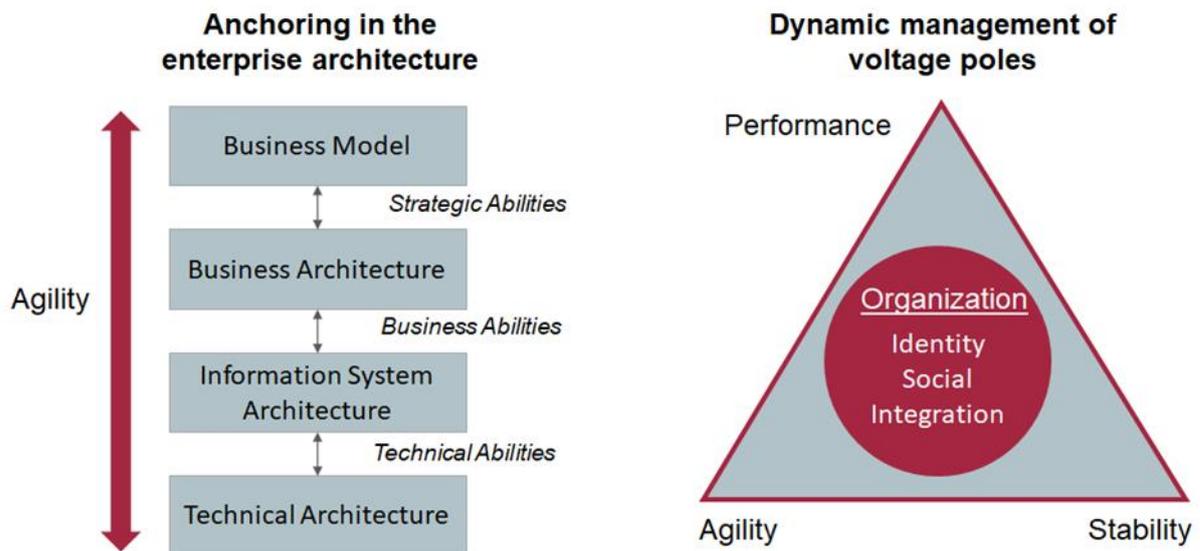


Figure 1: Management in Agile Companies

[GLL18] brings up an interesting observation concerning the agile company in connection with transformation: the added value of adaptability at the cost of stability is often accompanied by identity loss and the endangerment of the social integration of the organization. Based on this, the authors derive the recommendation to not view agility and stability as separate phenomena but instead as two mutually depending voltage poles which were supplemented by the performance of the organization as a third voltage pole in Figure 1. Accordingly, the management of the voltage poles is an innate task of corporate management.

Strategic business management and adaptive planning

It is evident that especially in the VUCA world, managing these voltage poles is necessary yet insufficient. This management needs to be embedded into a strategic corporate management that, based on a long-term applied vision, develops medium-term goals and strategies. In doing so, care must be taken to ensure that these corporate management specifications do not curb the agility in the company. In point of fact, they should give a frame in which agility has a chance to unfold meaningfully in compliance with the voltage poles mentioned above.

However, this will only succeed if the goals and strategies are in accordance with the circumstances in the VUCA world, i.e. if the business context is perceived in its variability and enables the agile company to react quickly to changes.

But how can such a framework be created? This is where for an increasing number of companies, simulation comes into play - which is developing into an important instrument of corporate management. Only automated simulations make it possible to include not only one or a few variants of the business context in corporate planning, but a multitude of possible developments in the business environment. And the future will show that the expected combination of simulation techniques with machine learning methods will result in qualitative improvements of both the simulation results and particularly the reliability of calculated forecasts.

Traditional methods of corporate management assume that strategic planning provides a binding framework for subsequent tactical and operational planning. And the validity of the strategic planning with one year and more provided a stable, reliable framework for the subsequent more detailed planning. These times belong to the past in the VUCA world. If you look at the most recent examples such as Brexit, the German energy revolution or the prospects for new tariffs in trade with

the USA, it becomes more than evident that the reaction times of companies, even in the strategic area, have melted down to a few weeks – with corresponding effects on tactical and operational planning. Companies are thus faced with the challenge of migrating their traditionally sequentially executed planning into a highly integrated planning procedure. This requires a high degree of adaptability in the tactical and operational areas, which is insufficiently supported by conventional planning instruments, especially in the tactical area. In particular, the widely popular Excel-based planning is doomed to failure.

Adaptive supply chain planning

With powerful products for financial planning and supply chain planning, Oracle offers modern cloud-based instruments for adaptive planning. It is an indispensable prerequisite for breathing supply chains, as they are required in the VUCA world. Oracle's planning instruments are characterized not only by their functional strength when it comes to planning and forecasting, but also by their integration capabilities with operational business applications. Adaptive planning in the VUCA world requires that customers, suppliers and other business partners are also included in the planning process. The answer lies in collaborative planning processes that are supported by efficient and, above all, secure planning tools.

Figure 2 visualizes the most important components of the Oracle Supply Chain Planning Cloud. Oracle supports strategic and tactical supply chain planning and integrates operative planning tools from Oracle and third-party manufacturers via open interfaces, thus depicting the company reality which is often characterized by a heterogeneous system landscape in the operative area.



Figure 2: Adaptive Supply Chain Planning with Oracle Cloud Applications
 [Source: Oracle Corp.]

On the basis of the component Planning Central, the Oracle Supply Chain Planning Cloud offers products for the complete planning cycle:

- **Planning Central**
 Easy to use tool for the planning of demands, inventory and supply chains. Planning Central is required for Demand Management and Supply Planning.

- Demand Management**
 Based on proven forecasting algorithms and flexible analysis techniques, realistic demand prognoses are created and demands are structured.
- Sales and Operations Planning (S & OP)**
 Support of a five-tier best practice process for consent-based conciliation of demand and supply. Also consideration of finance planning specifications.
- Supply Planning**
 Planning of global supply chains across different levels with comprehensive possibilities for the simulation of planning scenarios. Efficient support for different manufacturing and logistics processes.
- Supply Chain Collaboration**
 Efficient support of collaborative business-to-business planning processes with flexible monitoring functionality and rapid handling of exceptional situations.

Figure 3 visualizes the interplay of the Oracle Supply Chain planning components presented in an overview. On the left, demand processes are depicted; on the right, supply processes. The conciliation of demand and supply under consideration of the business and finance goals subsequently takes place in S & OP.



Figure 3: Interaction of Components in the Oracle Supply Chain Planning Cloud [Source: Oracle Corp.]

Adaptive supply chain planning in the VUCA world means for the planning cycles in the strategic, tactical and operational areas to be much more closely intermeshed, and to leave strictly iterative planning in the past. But it also means that the results of operational business processes need to very quickly find reflection in supply chain planning. On the other hand, planning results need to be reported to operational processes just as quickly – in the case of exceptional situations, often even in real time. Figure 4 gives an impression of the complexity of these requirements. And it shows the integration options the Oracle Supply Chain Planning Cloud is equipped with.



Figure 4: Embedment of the Oracle Supply Chain Planning Cloud in the Application Landscape of the Company
 [Source: Oracle Corp.]

Conclusion and prospects

Serious changes are the characteristics and drivers for the VUCA world. It is interesting to note that these changes were initially, to a large extent, a by-product of globalization and the emergence of multilateralism. These days, however, the strongest changes are more likely to be the consequences of the attempted renunciation of multilateralism and of an attempt of forced deglobalization. In my view, these changes prove to be much more difficult to manage because they are hardly characterized by ethical principles and rational economic behavior. And the risks associated with these changes are incomparably greater.

As the explanations in this paper show, there are viable concepts and powerful planning tools to effectively address the challenges in the VUCA world. Oracle has acquired an important role in the market. But will the instruments be able to withstand the ever-increasing challenges in the VUCA world in the face of the rapid speed of change? There is no conclusive answer to this question just yet. However, trends can be observed that are driven by an intensified use of modern digital technologies:

- **Autonomous Supply Chain Planning**

Modern planning tools like Oracle Supply Chain Planning Cloud already offer a high automation degree through adaptable workflows, thanks to which efficiency and quality in the planning process rise and collaboration in the planning teams is promoted. Due to the increasing application of machine learning methods, a significantly higher automation degree is reached, in which entire bundles of routine tasks in the planning process (data acquisition, process monitoring, assessment – just to name a few) are completely relocated into the software. By doing so, planners receive more freedom for not automatable tasks with simultaneously improving solution quality and heavily abbreviated planning cycles.

- **Simulation**

In the face of the accumulating volatility and uncertainty concerning the business context, simulations steadily gain in significance. In addition, the usability has been significantly increasing. Responsible for this are simulation tools in which artificial intelligence technologies are applied. They help in the formulation of realistic simulation models, the generation of appropriate simulation data, and the evaluation, comparison and assessment of simulation results as well the derivation of forecasts.

- **Big Data**

With the increasing spread of cyber-physical systems and their networking on the Internet of Things (keyword: Industry 4.0) as well as the use of social media platforms in the business world, companies have valuable big data at their disposal. Big data analyses provide information about the processes in the company and in the business partner collaboration. Analyses of the customer journey and the supplier journey are of particular importance, especially if the big data collected by the company itself is linked with industry and market data. In the VUCA world, big data is invaluable in supply chain planning and simulation, especially in determining future forecasts. The handling of big data and its use in the corresponding software tools will, however, only be practicable if the tools offer a high degree of automation up to autonomous concepts.

- **Collaboration based on trust**

In an economy that has been coined by the intense corporation of different business partners and an increasing proximity to customers and suppliers, planning and forecasts can only be of high significance and quality when the partners have already been included intensely into planning. To do so, efficient collaboration tools are required, like e.g. those made available by Oracle. To what extent the collaboration is built on a solid basis of trust however will always be decisive for success. And although the belief in the importance of trust-based collaboration is sometimes shaken, I stand firmly convinced that it is well worth fighting for more trust in the digitized VUCA world.

References

- [BeL14] N. Bennett, G.J. Lemoine (2014): What VUCA really Means for You. In Harvard Business Review, Jan.-Feb. 2014.
- [BIT11] BITKOM (Hrsg.) (2011): Enterprise Architecture Management – neue Disziplin für die ganzheitliche Unternehmensentwicklung. BITKOM, Berlin. <https://www.bitkom.org/Bitkom/Publikationen/Leitfaden-EAM-Enterprise-Architecture-Management.html>
- [GLL18] H. Gergs, A. Lakeit, B. Linke (2018): Agilitaet braucht Stabilitaet: Was Unternehmen von Kampfflugzeugen, James Bon und Moses lernen koennen. In zfo 05/2018, Schaeffer-Poeschel Verlag, 314-319.
- [MKK16] O. Mack, A. Khare, A. Kramer, T. Burgartz (Hrsg.) (2016): Managing in a VUCA World. Springer, Heidelberg/New York.
- [RSN19] D.K. Rigby, J. Sutherland, A. Noble (2019): Das agile Unternehmen. In Harvard Business Manager, Jan. 2019, 33-42.
- [SVO11] F. Schoenthaler, G. Vossen, A. Oberweis, T. Karle (2011): Business Processes for Business Communities: Modeling Languages, Methods, Tools. Springer Verlag.
- [VSD17] G. Vossen, F. Schoenthaler, S. Dillon (2017): The Web at Graduation and Beyond: Business Impacts and Developments. Springer International Publishing, Cham, CH.

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