

# Decision Intelligence

Concept Summary & Application

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*St. Gallen/Dubai, Decmeber 2018*



*“Decision Intelligence Is the Near Future of Decision Making: A Gartner Trend Insight Report”*

*Gartner Group, October 2018*



*“I think of **Decision Intelligence** as augmenting data science with the behavioral and managerial sciences. And the key here is that in order for us to let the data drive the decision, that decision context has to be framed upfront. So the decision-maker has to understand what it actually takes to get them to want to do one thing versus another.”*

*Cassie Kozyrkov, Chief Decision Scientist, Google, 2018*



*“The **Decision Intelligence** Lab is committed to the research and development of cutting-edge machine learning and optimization technologies to build smart decision-making systems, which improve the efficiency of business operations and increase business income. Through partnerships with leading institutions, the lab has built systems for computing resource optimization, new retail, smart logistics etc.”*

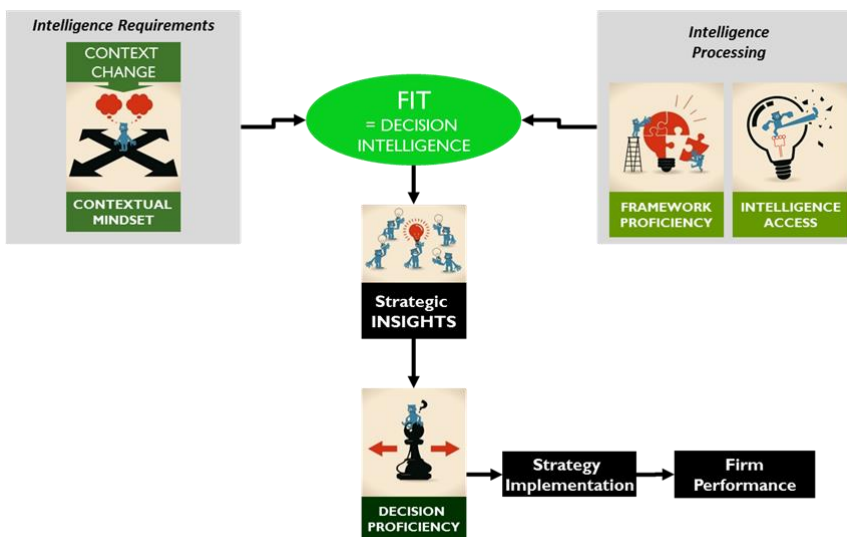
*Alibaba, DAMO Academy, 2018*

## 1. DECISION MAKING in a VUCA World

Today's dynamic world is characterized by **volatility, uncertainty, complexity, and ambiguity (VUCA)** and throw up many challenges for senior executives and other leaders around the globe. To make important decisions in such VUCA environments, it is crucial for senior executives to find the right fit between the intelligence required as inputs to decision making and how their organizations gather and process intelligence. This article examines how '**Decision Intelligence**' requires senior executives to attain the right fit between intelligence requirements and intelligence processing capacities in diverse environments to improve decision-making and drive competitive advantages.

Based on lessons learned from various projects we have developed the elements of a '**DECISION INTELLIGENCE NAVIGATOR**' and discuss their implications on the intelligence processing capacities of companies and their executives (Figure A).

**Figure A: Four Key Elements of the Decision Intelligence Navigator**



Source: Authors

## 2. Why do we need DECISION INTELLIGENCE?

The business environments of companies around the world are progressively becoming more volatile, uncertain, complex and ambiguous, often denoted by the acronym 'VUCA'. As a result, companies experience that their existing business models are increasingly challenged by developments such as swift policy changes, fast macro-economic and social changes as well as disruptive technological innovations and advancements. One such disruptive advancement is the shift to an increasingly knowledge-based and digitalized society and economy. This has already triggered policy shifts, redefined how people communicate and share information, and consequently necessitated the development of completely new business strategies – and much more is still expected to come. These developments are superimposed with dynamic formal and informal institutional contexts, such as the migrant influx in Europe, the economic restructuring and anti-corruption drive in China, and recent shifts in the political landscape in many countries.

**In such dynamic environments, the information and intelligence requirements of senior executives to formulate competitive strategies are exacerbated.** Senior executives and other decision makers therefore increasingly rely on big data-driven approaches. At the same time, the way individuals, groups, organizations, and industries work and collaborate are being transformed by the capacity to store, communicate, and compute information. **However, with an almost unlimited access to an array of information sources, senior executives also face a host of challenges, such as potential information overloads leading to biases in judgements, costs associated with managing vast information, and the risk of being distracted from more relevant information.**



**For making the right strategic decisions, senior executives and other decision makers must be proficient at filtering the insights that really matter from the information (over)flows they are exposed to.** Almost 30 years ago, scholars already identified that a misfit between the information requirements of a company and the way it gathers, and processes information increases the likelihood of accidentally neglecting relevant factors, filtering out important information, or relying on misleading clues. Recent research has further empirically confirmed that a fit between the various levels of information requirements of a company and its information processing capacities leads to superior levels of strategic insights (i.e. strategic quality in the form of potential competitive advantages to be realized), and subsequently to firm performance.

### 3. THE NEED FOR FIT

Organizational information processing theory has long established that the effectiveness of decision-making and firm performance is influenced by managers having an adequate information level. On the one hand, organizations have information processing requirements, which are driven by the characteristics of the tasks they undertake and the focal business environment. On the other hand, the organizational structure dictates the information processing capacities of a company. When organizations have insufficient information to carry out a task, they are said to face uncertainty. **As the amount of uncertainty and ambiguity they face increases, they need to adapt how they gather and process information effectively and efficiently. Successful organizations create a fit through the adaptation of their processes for acquiring, transforming, and interpreting data, information and knowledge (i.e., their intelligence processing capacities), to the amount of uncertainty and ambiguity they face (i.e., their intelligence requirements).**

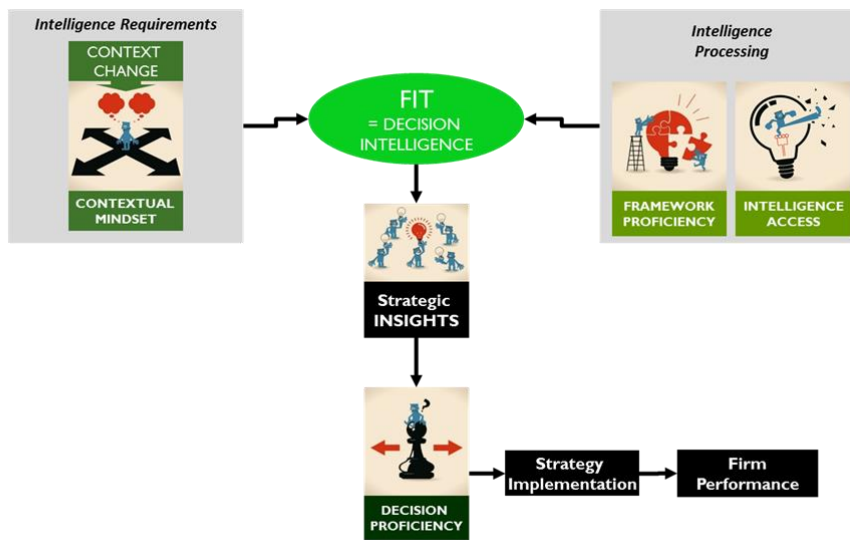
With increasing VUCA levels in today's business environments, exacerbated by dynamic changes like industry disruptions or shifting political landscapes, senior executives face much higher information requirements in their decision making than ever before.

Over 25 years ago, Prof. James G. March wrote that *“Decision makers and organizations (a) gather information but do not use it, (b) ask for more and ignore it, (c) make decisions first and look for relevant information afterwards, and (d) gather and process a great deal of information that has little or no relevance to decisions”*. This is often still an apt reflection of today's reality.

### 4. DECISION INTELLIGENCE – THE FIT

**DECISION INTELLIGENCE** stands for a different perspective when thinking about strategic analysis and the creation of competitive advantages. It advocates an increased awareness of the importance of relevant intelligence, and how senior executives and their companies deal with it. **It is not about using technology to transform data into knowledge. DECISION INTELLIGENCE rather takes a management perspective to help executives master the information acquisition challenges that they are increasingly facing, to invest in the right resources, position their companies in the right market segments, and appropriately affect or respond to institutional changes, pressures, and voids.** The effective application of Decision Intelligence in a company builds on four elements (Figure B) as represented in the **Decision Intelligence Navigator**:

**Figure B: Four Key Elements of the Decision Intelligence Navigator**



Source: Authors

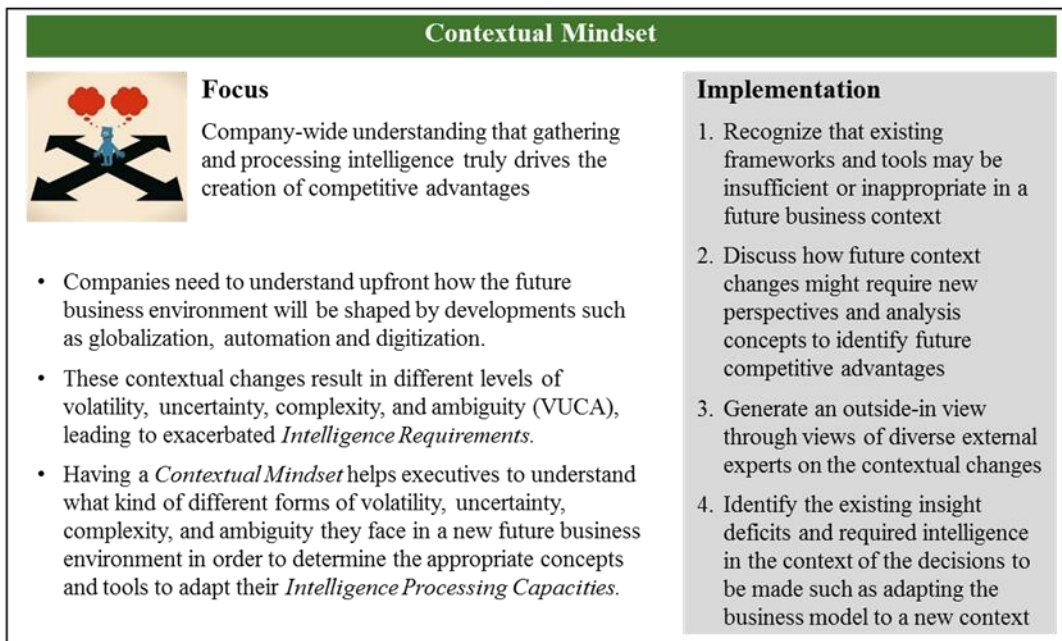
The **Decision Intelligence Navigator** claims that senior executives must recognize the intelligence requirements they face in their business environments (i.e. contexts), represented by their **Contextual Mindset**. The **Decision Intelligence Navigator** also states that senior executives must also have sufficient intelligence processing capacities, through a combination of the relevant frameworks (**Framework Proficiency**) and the necessary access to intelligence (**Intelligence Access**), to create a fit with the respective intelligence requirements. Achieving such a fit helps senior executives generate decision relevant knowledge (i.e. strategic insights). Finally, they must be able to translate these insights into effective and efficient decisions through their **Decision Proficiency**.

In the following sections, we explain each of these four elements, and how they collectively help senior executives in achieving a fit between intelligence requirements and intelligence processing capacity to address their decision-making challenges in the VUCA world, develop better strategic insights, and consequently create competitive advantages for achieving higher firm performances.

**5. CONTEXTUAL MINDSET: Does your company recognize the value of intelligence in different contexts to drive competitive advantages?**

In the context of Decision Intelligence, a **Contextual Mindset at the organizational level can be confirmed to exist when senior executives understand the relevance of various forms of intelligence as well as the value of a multitude of ways to gather and process intelligence in different decision-making contexts**. In other words, this is when the senior executives of a company understand the importance of the fit between the intelligence requirements driven by the different levels of VUCA that their company faces in its business environments and the variety of intelligence gathering and processing capacities it requires. Without an understanding of the intelligence requirements in their business environments, it is unlikely that senior executives will proactively make the necessary investments to master the subsequent steps (Figure C).

Figure C: Contextual Mindset Overview



Source: Authors

A **Contextual Mindset** can be leveraged by using any of the following exemplary approaches:

- Making use of existing intelligence, such as big data, in a way that nobody else does – e.g. developing new algorithms;
- Making use of intelligence that nobody else has - e.g. applying new perspectives or frameworks to analyze the current or future business environment or the company;
- Innovating the way of intelligence gathering and processing - e.g. leveraging access to social capital or to new data transmission technologies such as low power wide area networks (LPWAN).

**6. FRAMEWORK PROFICIENCY: Do your executives master multiple frameworks to understand their changing business environments in a VUCA world?**

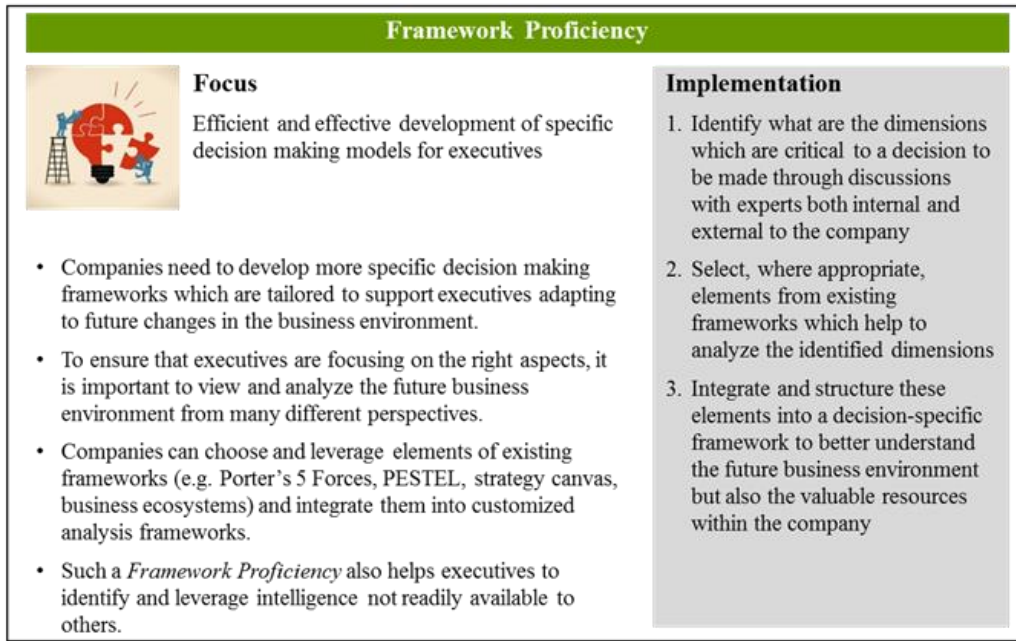
Companies that have developed a Contextual Mindset and understand the value of intelligence to drive competitive advantage invest into the Framework Proficiency of their executives. **Framework Proficiency is the capability of executives to apply multiple perspectives and approaches to the major decision-making challenges that they face (see Figure D). The importance of Framework Proficiency might be best summarized by a statement of Peter Drucker in 1967, “To know something, to really understand something important, one must look at it from 16 different angles.”** In the same article, he further wrote: “The question we must ask is not, ‘How many figures can I get?’ but ‘What figures do I need? In what form? When and how?’ We must refuse to look at anything else.” Today, senior executives must not only address the acquisition of intelligence through a multitude of sources, but also analyse their organizations and business environments through different lenses, or frameworks, to have a more comprehensive understanding of the status quo and relevant future developments.

Prof. Michael G. Jacobides of the London Business School recently noted that “we may need new tools or frameworks. When the environment changes profoundly, the maps with which we navigate it may need to shift as well.” This translates into the need for senior executives to refocus efforts to developing customized decision-making models instead of simply trying to replicate existing frameworks with an insufficient appreciation of the contextual factors in which they succeeded in the past.

**Senior executives with Framework Proficiency thus focus on the development of tailored decision-making models** – be it to decide on a potential joint venture in the Indian aerospace industry or the establishment

of a micro-brewery in Timor-Leste. **Framework proficient executives can ask the right questions, actively seek only the intelligence they need, and adapt their information gathering and processing activities to fit their intelligence requirements** (Figure D). In other words, senior executives select from existing frameworks or create their own frameworks to generate insights that matter most for a specific decision they must make.

**Figure D: Framework Proficiency Overview**



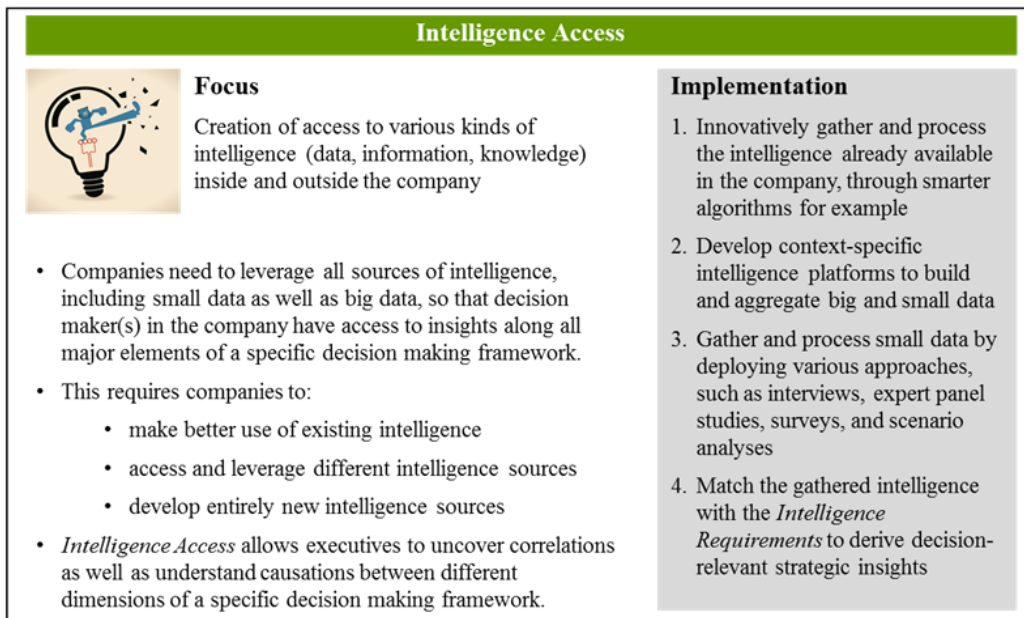
Source: Authors

## 7. INTELLIGENCE ACCESS: Can your company gather and process the necessary intelligence?

In a VUCA world, **senior executives can only leverage their Framework Proficiency if their companies can provide them with the Intelligence Access they need to address their decision-making challenges.** The best decision-making frameworks are useless without access to the required intelligence. Having such access, beyond what is available from conventional sources and traditional media, helps senior executives to address their insight deficits efficiently and effectively. **While Framework Proficiency enables executives to identify and use ideas that nobody else has, Intelligence Access allows them to make better use of existing data as well as to acquire data that isn't available to competitors** (Figure E). In a VUCA world, this is a fundamental source of firm heterogeneity and, if leveraged effectively in a company's strategic decision-making process, forms the basis of competitive advantages.

**In this context, we differentiate between 'small data' and 'big data' that companies should access. On the one hand, big data consists primarily of vast quantitative information and the correlations which they can reveal, where companies can leverage the almost unlimited possibilities of advanced (data) analytics. On the other hand, small data refers to the opinions of a relatively limited number of people and their qualitative views and assessments based on their experience and expertise to uncover causal relationships or disruptive future developments.** This is especially significant when an understanding of past developments does not allow drawing conclusions regarding the future as in the case of most emerging geographical as well as product and service markets and their policy environments. For example, referring to specific domain experts ensures the richness of the intelligence at hand since they draw upon their extensive knowledge and understanding of local contexts. Taken together, big and small data provide executives with an effective way of dealing with a VUCA world.

Figure E: Intelligence Access Overview



Source: Authors

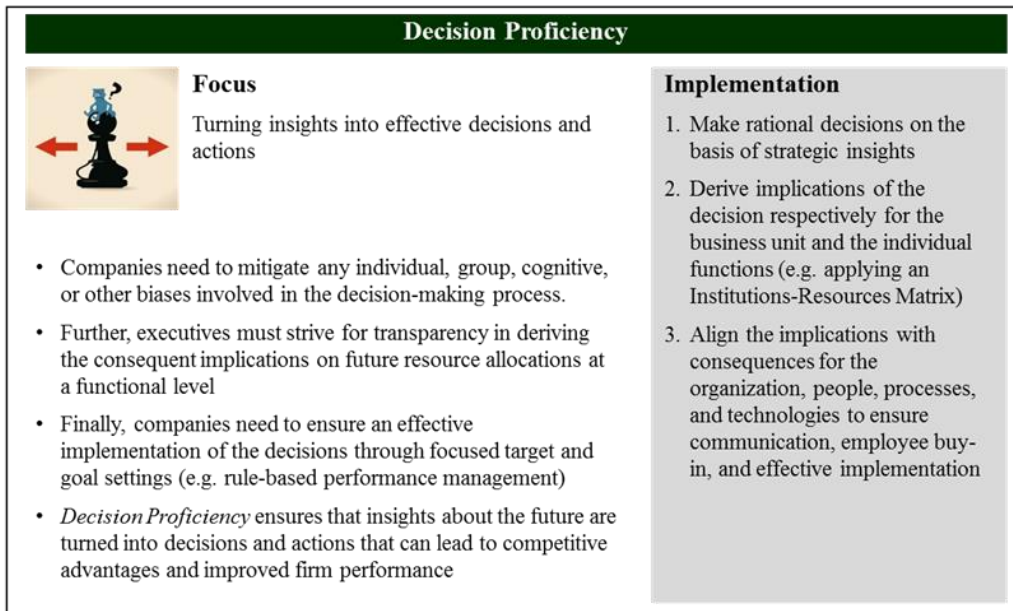
## 8. DECISION PROFICIENCY: Do your executives turn intelligence into effective decisions and implementation?

As the final element of Decision Intelligence, **framework proficient executives with the right contextual mindset and intelligence access still need to turn their insights into strategic decisions and implementation activities.** Beyond understanding the current industry and institutional environments, and analyses of possible future changes, senior executives should evaluate the implications of the gathered intelligence for the company and derive consequences on a functional level. **Decision Proficiency is about understanding how to improve decision-making, including the avoidance of biases and increasing the capacity to deal with dynamic business environments** (Figure F). It encourages the realization of the true value of decisions by translating them into concrete actions with implementation design and change management plans.

Improved decision-making starts with an understanding of how to avoid biases to effectively leverage the acquired intelligence. It is important for executives to protect themselves from being one-sided or predisposed to views. Therefore, knowledge about the cognitive and personal biases involved in decision-making processes is imperative. Nowadays, a lot of advice is available on this front and the numerous diversity programs in companies are a positive development to include a multitude of perspectives in analyses and decision processes. Extant literature has also documented the role of managerial social capital in mitigating biases.

**Finally, being aware of the implications of their decisions, senior executives need to know how to turn them into actions. They need to better understand how to design plans to implement the strategic initiatives resulting from their decisions. Executives need to make use of implementation frameworks that allow setting things up the right way. They need to break down targets into timely, digestible, and definable goals, and create a roadmap that aligns the day-to-day activities of the organization with the overarching mandates of their strategy.** It is also crucial that these (sub-)targets can be communicated within the organization easily to ensure employee buy-in and commitment. To do so, executives need to pivot their plans around the organization, people, processes, and technologies.

**Figure F: Decision Proficiency Overview**



Source: Authors

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