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DECISION MAKING PROCESS IN THE BUSINESS INTELLIGENCE 3.0 CONTEXT

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Summary

Business Intelligence (BI) is the critical tool for making quality and fact-based decision. It helps decision-makers to make the timely and right decision. Using BI solutions, the decision-makers can improve decisions quality and ultimately they can be more efficient in fulfilling its business objective, contributing to the organization's competitive advantage. BI solutions and tools are not sufficient enough to make competitive advantage alone. Highly qualified personnel need to engage to extract the full potential of BI solutions and to be the bridge that connects domain and expert analytical knowledge. In this aspect, if managing of organization ambidexterity improves, decision quality improves as well. Final BI products and insight will be useful only if decision-makers use them at every level of decision making. The organization should take motivational steps to assure that managers read, prepare and exchange BI products. Decision-making standard of "HiPPOs" (the Highest Paid Person in Organization makes the decision) should be a relic of the past, and new decision-making process should be data and intelligence driven.

The paper consists of three parts. Part 1- gives the overview of theoretical consideration of the decision-making process and manager's roles. In Part 2- BI system, with all its elements, is portrayed as the indispensable tool for the quality decision-making process. Part 3- presents the conclusion.

Keywords: *Business Intelligence, decision-making process, decision, data, ambidexterity, analyst*

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The business decision is a choice made between alternative courses of action in a situation of the uncertainty, while decision-making process is the thought process of selecting a logical course of action from the available options. There are "two quite different standpoints" of the decision-making process: the objective and the phenomenological." (Norman, 1967). The focus of the objective standpoint is in the decision-making process, and of phenomenological standpoint is on decision maker's personality and cognitive characteristics. Managers make about three billion decisions each year, and almost all of them could have been better. Improvement of decision quality has a direct effect on business results, especially if we have in mind that USA's GDP is approximately 12 trillion USD and that 142 million US workers contributed to this figure. If we make an assumption of decision quality improvement in one year of 1%, then it could result in overall financial gains of 120 billion USD. (Prentice Hall , 2006)

PART 1. DECISION-MAKING PROCESS- THEORETICAL CONSIDERATION

There are two main decision-making models: *rational and non-rational*. The *rational model* describes decision-making process as multiple stage process, based on logic, extensive use of information, heavily based on analytical process and insight from data. Users of this decision-making model strictly follow predefined stages. This model usually includes following steps: identify the problem, gather information, identify alternatives, weight evidence, choose among alternatives, take action, and review your decision. (University of Massachusetts , 2018)

The rational decision-making (Hernandez, 2014) model is based on following assumptions: benefit maximization, perfect information availability, all factors that influence decision-making process are measurable and possess cognitive, time and resources precondition for evaluation of every stage in the decision-making process. This decision-making model does not take in consideration following factors that potentially can influence decision quality: variables that cannot be quantified, personal feelings, biases, emotions, intuition, personal preferences. Neglecting the importance of factors mentioned above represents disadvantages of this decision-making model.

On the opposite side lies non-rational or judgmental decision-making model (Hernandez, 2014) Information and solution that supports making a data-driven decision is a significant part, but at the end, the managers are those who ultimately make the decision. As some research show (Carucci, 2016) "at the heart of great decision making lies a balance between instinct and analytics." The researcher in the field of human behavior Herber A. Simmon proposed so-called "*Bounded rationality*" (Simmon, 1972) theory which "shares the view that decision-making is a fully rational process; however, it adds the condition that people act on the basis of limited information. Alternative theories of how people

make decisions include Amos Tversky's and Daniel Kahneman's prospect theory (Tversky A. and Kahneman D., 1986). "*Prospect theory*" reflects the empirical finding that, contrary to rational choice theory, people fear losses more than they value gains, so they weigh the probabilities of negative outcomes more heavily than their actual potential cost. Economics in the twentieth-century was based on the theory that people make rational choices when giving useful information, a theory proved to be somewhere between spotty and completely wrong thanks to a revolution in behavioral economics, led by Nobel Prize winner Daniel Kahneman. (Larsen, 2016).

1.1. Rational decision-making models-examples

Herbert A. Simons decision model (Simon, 1960) presents decision-making process based on information and rationality. His decision-making model consists of three stages.

The *intelligence stage* identifies the existence of a problem. In this stage, crucial importance has information gathering which will allow discovery and definition of the problem. In the *Design stage*, there are alternative solutions, as well as a need for more information. In this stage, the model will be formulated, as well as alternatives detected, and implementation results prognosed. In the *Choice stage*, there is a selection of the best options, and creation of the action plan. In this stage, Group Decision support system can be used to secure as wide as possible inclusion and collaboration to chose the best solutions. This phase is heavily related to the Design phase, and it should be straightforward. After this three steps, there is one more final step, and this is implementation testing phase. (Beshears J. and Gino F., 2015)

Another decision-making process created after comprehensive research (Larsen, 2016) imply that for the making quality decision it is necessary to develop checklist which should be followed to reach better decision quality and results. The researchers suggest that managers who regularly follow checklist save an average of 10 hours of discussion, decide ten days faster, and improve the outcomes of their decisions by 20%. Again information sufficiency is something that cannot be neglected in this model of decision-making model as well.

1.2. The Levels and the Roles

There are three levels of decision making: strategic, tactical and operational/individual level. Each of the levels has different information requirements. On the *strategic level*, senior management mostly makes the unstructured decision, require general information with broad scope, interactive in real or near real-time, internal and external and ad-hoc based information. On the *tactical level*, middle management makes the semi-structured decision, and there is a need for focused , specific and internal information that are interactive in real time. On the *operational level*, the structured decision is taken by

operational management or by individual employees and team. This level requires specified, scheduled, narrow real-time, internal and detailed information. (University of Porto, 2018)

Decision making has changed significantly over the time (L. Buchanan and A. O'Connell, 2006), mainly due to the fast and dramatic changes of conditions in the business environment. To cope with these conditions, managers that are performing these objective and quantitative analysis, need to consider the qualitative factors and make subjective judgments as well. (Ram C. and Melind M., 2013). All employees commit preventable mistakes, not because they are dumb but because the way how the human brain works. Instead of trying to rewire the human brain, managers should act as an *architect* to alter the environment in which they make decisions. (Beshears J. and Gino F., 2015) According to Mintzberg (Mintzberg, 1973), there are ten managerial roles divided into 3 Groups: *interpersonal, informational and decisional roles*. The manager has to be informed and be able to use available data and information quickly that he can be successful in all roles. Information can be trusted and used with great confidence. Within the monitor role, which is sub-group of informational role (Mintzberg H., 1973, 68-69), the manager collects information according to the character and source type. In this role managers takes information from the internal operations, external events, analyzes, ideas and trends, and pressures. In addition, the disseminator and the spokesman's role in collecting information are crucial factor.

Processing, obtaining and disseminating necessary information for securing efficiency in reaching business goals are one of the most critical manager's tasks. Quality information dependency is especially crucial in stage 2, "*data gathering*" since it is beginning of decision-making process. If the data and information are spoiled, then whole decision-making process will be infected and based on false and incorrect inputs. According to the behavioral scientist, behavioral decision researchers and psychologists (Beshears J. and Gino F., 2015) there are two systems (Kahneman, 2002) of processing information as a base for decision making. *System 1*, automatic, instinct and emotional, focused on concrete and immediate payoffs; *System 2*, slow, logical and deliberate, focused on slow and long strategic outcomes. Both systems have distinct advantages and disadvantages, and they can be used jointly or separately as a lever for reaching desired outcomes.

1.3. Managers and Decision support systems

For making tough decisions managers get paid. Applying the same basic decision-making tools may be inappropriate. One size cannot fit all! Therefore, managers need to use a diverse range of tools, sometimes sophisticated, that are appropriate for complexity. (Courtney H. et all, 2013). There are two main dimensions in decisions making (Rosenzweig, 2013): control and performance.

Control is about how much we can influence the outcome of the decision and *Performance* is the way we measure success.

Support systems that were part of the decision-making process have been engaged since 1950 with the development of commercial capabilities for supporting this process. Further development of hardware and software capabilities, the platforms and products become more sophisticated and offer better and explicit support to the decision makers. One of the significant milestones in the evolution of support systems has been the development of Decision Support System (DSS). This is directly correlated with the higher accessibility of personal computers and development of user-friendly software. Spending on DSS for a long time represented the primary driver of growth of IT industry. As it is shown at the Figure 3 the advance in technological capabilities is closely followed by the development, improvement and evolution of DSS tools.

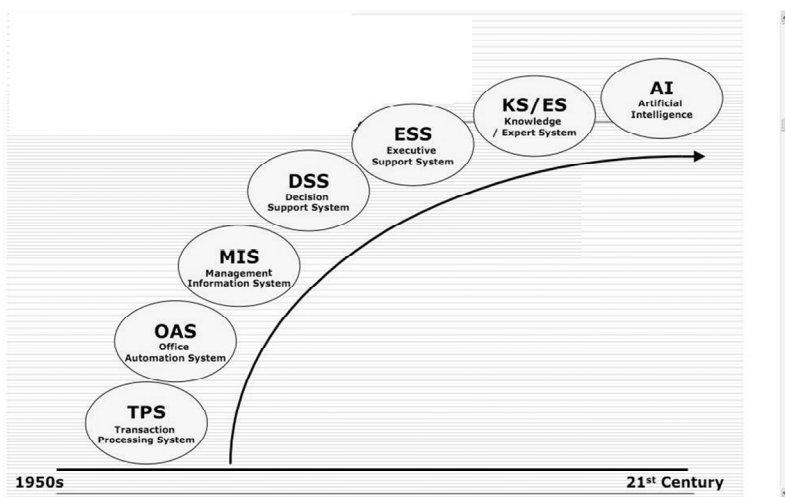


Figure 1 Evolution of decision support tools

Several different general types of decision support systems have been identified in the literature (Wienclaw, 2013). These includes model-driven systems, data-driven systems, knowledge-driven systems, and group support systems.

- “*Model-Driven Decision Support Systems*”- use various financial, optimization, or simulation models as aids to decision making. This systems use limited data and parameters provided by the decision makers, but do not generally require large databases.

- “*Data-Driven Decision Support Systems*”- utilize time series data gathered on the factor or characteristic of interest at regular intervals over a period of time. Basic data-driven decision support systems access simple file systems using query and retrieval tools whereas more advanced data-driven systems allow the manipulation of data or analytical processing.
- “*Executive information systems*” are a type of data-driven decision support system, which are designed to support executive decision making by presenting information about the activities of the company and the industry.
- “*Knowledge-Driven Decision Support Systems*”- are person/computer systems with specialized problem-solving abilities that can make suggestions or recommendations to the user. It may include the application of artificial intelligence to the decision making process.
- “*Group Decision Support Systems*”- enable workgroups to process and interpret information together even when they are not physically collocated. These systems use a network and communications technologies to foster collaboration and communication in support of decision making. Like other decision support systems, group support systems support decision making in situations that are not fully structured and assist in analyzing problems.

PART 2. BI AND DECISION MAKING PROCESS

2.1. Data- information- intelligence- decision quality

The characteristics of the contemporary business environment are high velocity, variety and the massive volume of data (McAfee A. and Brynjolfsson E., 2012). With the development of the new sources and ways of data measuring, companies and decision makers have to deal with the vast amount of data produced by doing regular business. Usefulness of data grows with the amount of available data and with the processing possibilities. When available processing capacities are not sufficient enough to efficiently “digest” the available data, their usefulness deteriorate. As the data accumulation continues, under the assumption that nothing is being done to improve the resources required for processing, usefulness keeps diminishing. Decision makers spend more and more time on processing data contents. The company is unable to make decisions quickly, there is no data control, and they become subject to gradual alienation (Pranjić, 2011). Furthermore, integrity and value of the data are decreasing. At the point when marginal value of additional data is equal to zero, the data transform its character from company asset to the burden. The risk of making wrong decision rises. Time allocation for the decision making is longer and its reaction time slower. Implementation of the BI solutions can increase work performance of employees,

improve the availability of generated reports for decision-making purposes, and not least to enhance the quality of decision-making executives available through particularly understandable graphical reports (Kubinaa M., Komana G. and Kubinovab I., 2015).

The level of intuition in the decision process, which was a predominant part of a decision-making process, and post hoc data that was available as a base for the decision making is overtaken by informed decision, based on near real or real-time data. "*As organizational decisions increasingly becoming more data-driven, it also explains why so many organizations have made data governance a strategic and organizational priority.*" (Schrage, 2016). The decision makers are pressured to make the right decision, so there is a need for a constant flow of fresh and useful data.

2.2. BI defined

Some management scientist (Martin R.L. and Smith T.G., 2017) argue "that management is a science and rigorous analysis of data must drive business decisions. In an EY survey, 81% of executives said they believed that "data should be at the heart of all decision-making, leading EY to enthusiastically proclaim that "Big data can eliminate reliance on 'gut feel' decision-making." The survey that Business Intelligence Unit has done shows that the high-quality data but also sound judgment are critical in making a right business decision (Kielstra, 2007). A significant number of definitions of BI are in the literature. Analyzing definitions, we can conclude that BI is 1) a system, concept, method, process or structure 2) of a continuous, defined and organized gathering, keeping and processing of data and access to data 3) on clients, products, financial indicators, business transactions, stock management, orders, etc., 4) to acquire correct and timely information, necessary for making a right and appropriate strategic, operative and tactical business decisions, 5) with the aim of overall enhancement of business performance. (Pranjić, 2011)

Another synthetic definition (Wieder B., Ossmitz M., 2015) show that BI is analytical, technologically supported process which gathers and transforms fragmented data of enterprises and markets into information of knowledge about objectives, opportunities, and positions of an organization. Furthermore, Wieder (2015) explains that we should be recognized and distinguish following building block of Business Intelligence,

- BI software which denotes software products primarily designated to support analytical process (e.g., data warehouse, data mining software e.t.c),
- BI tools (or application) which represent BI software product installed in the organization, and
- BI solution represents the total package that is consist of BI software and BI tools and technology that is implemented in the organization with the objective of fulfilling its goals.

In this distinction, we can see that BI is not only software or tools, but whole process and systematic approach managing data and its sources as support of decision making.

2.3. Business Intelligence 3.0

In the literature, it can be found different names which portray the more or less the same subject, and depending which vendor we can find following names for the BI such as "*Data Discovery, Advanced Visualization, Visual Analytics, Business Discovery, Self-Serve Business Intelligence or Business Intelligence 3.0.*" (Capiro, What Is Business Intelligence 3.0?, 2015) Alternatively, Business Intelligence & Analytics 3.0. (Chen H., Chiang R., Storey V., 2012)

In further study, the focus will be on Business Intelligence 3.0 (BI). In the evolution process from BI 1.0 to the BI 3.0., this tools and mechanisms become unavoidable mechanisms for improvement of the decision-making process and consequently improvement of the decision quality. The characteristics of BI 3.0 are portability, accessibility, cloud-based platforms, and ability to process massive volume of the data coming from smart technology in real time.

BI 3.0 through mobile and sensor-based content, empower decision makers to easily run analysis which is location-aware, person-centered, context-relevant and provide user-friendly mobile visualization. (Chen H., Chiang R., Storey V., 2012)

Usefulness of BI can be support by the fact that in 2016 BI market is worth 15,6 billion USD with expectation to rise on 29.5 billion USD by 2022 with the compound annual rate of 11.1 % (Rowe, 2018). The main factors which influence such dynamic in BI spending are increasing demand by the small and medium enterprises and the increasing importance of fact-based decision making.

Figure 2 shows the journey from BI 1.0 to BI 3.0 with the main characteristic.

BI 3.0 – The Journey to Business Intelligence in a Nutshell

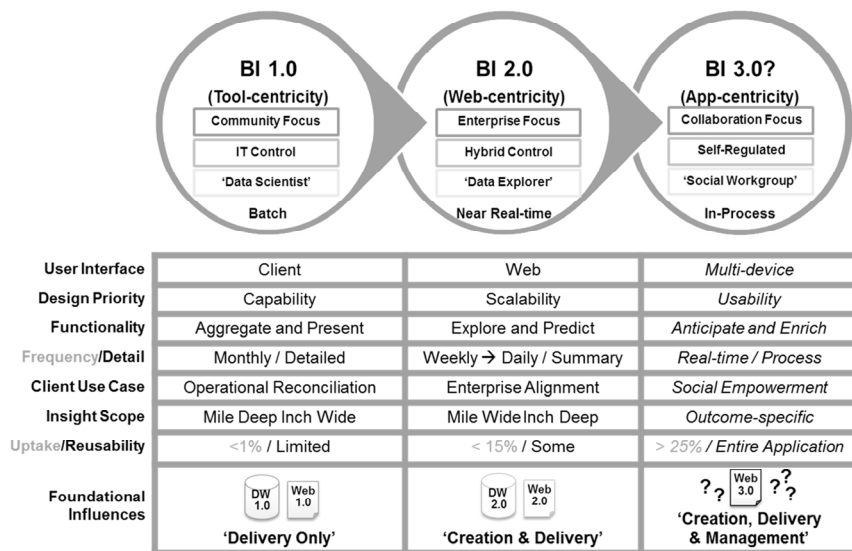


Figure 2. BI 3.0 - The Journey to BI in Nutshell (Gratton, 2012)

Even, with this impressive increase of the BI 3.0 market and using advanced analytical systems by the decision makers only about 18-20 percent of employees use BI tools (Moscovic, 2014), (Cabiro, Are You a Business Intelligence Avider? , 2015). In order to increase usability BI 3.0 and to unlock full potentials, the companies should undertake many specific organizational and technical adjustments and measures. Also, in the light of the newly introduced General Data Protection Regulations (GDPR), appropriate legal adjustments have to be implemented in order to provide legality of using of acquired personal data.

2.4. BI as the source of the competitive advantage

BI tools, software, and solutions are not the sources of competitive advantages because all competitors can acquire components and put in operational use for gaining advantages and reaching its business objectives. But the quality of BI management can be. In the study Wieder (2015), tested the hypothesis of how BI management quality is related to the quality of managerial decision making. In the study, there is a positive correlation between the quality of BI management and the quality of data. Furthermore, the study shows that the quality of BI management does not directly reflects better managerial decision making, but it does reflect through a set of indirect effects, primarily through data

quality and information quality. The research confirms the positive correlation between the quality BI management and data quality. Furthermore, the positive correlation between high-quality BI management and information quality also has been established. Both, high data quality and high information quality, directly contribute to an improvement of the quality of manager's decision. The research confirmed the positive correlation of quality of BI management with quality of decision-making process.

The overlapping and multiplying tasks of the extraction of data become the burden for the organization. Decision makers produce analysis and knowledge in unsystematic and silos way. Instead of having consensus, they are facing the situation with different knowledge and understandings which are the main factors that are influencing the company. They spend time and money on the additional activities and for the inventing the knowledge, without knowing that somebody else in the organization already invented "*the wheel*." This duplication and unnecessary workload lead to time and cost inefficiency, which will cause late or imprecise or even wrong decision, which ultimately leads toward losing the competitive position and overall ineffectiveness. "BI is bringing data and analytics to life to help companies improve and optimize their decision-making and organizational performance. Having the right data, at the right time and place (mobile, laptop, etc.), and displayed in the right visual form (heat map, charts, etc.) for each decision-maker, so they can use BI to reach their desired outcome." (Mulani, 2015). Decision makers that use BI have more time to choose right decision than those without BI. Gathering and analyzing time consume 66% available time for the decision maker who does not have BI comparing to 25% available time to those who have BI system in place. (Orescanin, 2002). The efficient BI system will detect change as soon as an event occurs, and the information about that will be stored and managed appropriately. The so-called "latency effect", the time between the event occurs and a reaction, is smaller (Dobrev K. and Hart M., 2015). The decision makers are in a position to use the information from the event in real time decision-making situation and adjust its operational and other functions. With the BI solution well integrated into the organizational structure, decision latency is decreasing and so the lost value decreases as well. Another research (Hatula J. D., and all, 2015) implies that disseminating marketing intelligence (*which is the part of the BI*) improves efficiency and effectiveness of decision-making process at various organizational boundaries such as marketing – finance, or marketing-R&D. Also, the dissemination of marketing intelligence enhances the financial performance.

2.5. Decision makers and BI experts interaction

The products that decision-makers can take out of BI system are wast. The essential factor for the success of BI project is the close interaction between decision makers and analyst. One of the primary objectives of BI is to help decision makers to improve quality of the business decision. BI is doing this in combination with high technological capabilities, data, and analytical insights.

Defining the right decision question or the problem that has to be resolved by quality decision is crucial in the decision making process. The analyst must have exceptional analytic knowledge to be able to deliver requested insights. High expertise in analytics often produces products that are very hard to understand for decision makers, so the use and applicability of analytical products are dramatically decreasing. Also, because decision-makers should not be experts in analytics, complicated and not easily understood analytical products are difficult to be assessed from the usability point of view by decision makers. Usually, this "misunderstanding" can result in neglecting the analyst's expertise, which again can promote the intuition of decision makers as a prime tool for decision making. An analyst has to be able to produce insight and decision support analysis, which has to be easily usable for the decision maker and which has to match decision maker expectation. So, an analyst has to be able to be transparent and to align with the decision maker objectives. In the same time analyst has to exercise rigor in his analytical process to secure traceability of his inputs and results but also coherence in his analytical work. The decision-makers have to be acquainted with the requirements of successful analytic works. They have to be capable to read and understand analytical reports, and to have developed basic analytical skills. Lack of these skills will lead to neglecting analytical insights and analytic service as such, and it will lead to a decision which is based on intuition, not to decision driven by data and knowledge. The requirements set by decision maker should be as narrow as possible. It is the best solution if they are placed together with analysts because this will influence the information sources, precision and time of delivery of insights. Symbiosis or close cooperation between decision makers and analytical support service is crucial to making the synergetic effect of quality of the decision. Kowalczyk and Buxman (Kowalczyk M. and Bauxman P., 2015) investigated the ambidexterity in the interaction between analyst and decision makers through multiple dimensions of the decision-making process. Since organizational ambidexterity defines the organizational capability of managing conflicting demands, there are the following tensions between decision makers and analysts in the decision-making process:

- *"Domain or specialization knowledge"*- describing tension that arises from the knowledge of analyst wherein some situation specialized analytical knowledge is preferable than domain knowledge.
- *"Flexibility or stability in analytical method and data sources"* - choosing methods and data sources in the analytical process has to be flexible enough, but in the same time, adequate procedural rigor has to be preserved to reduce information asymmetries.
- *"Advance or basic analytical elaboration"*- analyst has to choose how the analytical results will be present and communicated to the decision maker. Will it be presented as a basic product which in one hand can be easy to use but at the same time will signal lack of credibility and quality?

- "*Broad or focused analytic scopes,*" tensions arise from the fact that analyst faces different decision scenarios. The focused scope will be more concise and accurate, and it will reduce information asymmetry. The broader analytical scope can lead to more complex models and induce further gaps in understanding.
- *The analyst can apply specific tools and technique to analyze "Open and focused problem solution space,"* with the well-defined problem and then to deliver appropriate analytical products. On the other hand, open solution problem gives the opportunity to the BI analyst to deploy different tools and techniques to offer alternatives in the course of decision making procedure.

This study shows that achieving a higher level of managing organizational ambidexterity will lead to the higher decision quality. There is a clear relation created between higher levels of ambidexterity and high decision quality.

2.6. Decision making based on BI- motivation aspects

The decision makers tend to rely more and more on analytical products in everyday business decision-making process. It is critical that decision-makers read analytical reports. Creating reports that are useful for decision makers are often a complex and time-consuming process. BI solutions provide user-friendly interfaces for the end user reports, and as such, they become more and more comfortable to use by the end users. In the situation when all organizational measures were implemented to ensure trust, uniformity and data quality and when possible results of BI solutions are known, then decision makers can make own analytical reports as a basis for the informed and data-based decision. Also, information and knowledge sharing is one of the most critical factors for good decision making (Eisenhardt, 1999). Besides making BI tools and solutions available, the company has to establish the environment that promotes motivation for the decision makers to create, use and share BI tools and products. In many aspects, there is the motivation for best possible results in a decision maker everyday job. Rewards are one of the most widely accepted motivations (Chang Y.W., Hsu P.Y., Wu Z.Y, 2015). Rewards can be extrinsic or intrinsic; where extrinsic can be divided into tangible and intangible rewards (David, 2015). Tangible rewards are those that refer to a material or monetary incentives, and intangible rewards refer to those rewards that give psychological income, such as a feeling of belonging or friendship, reputation, etc. In the research (Chang Y.W., Hsu P.Y., Wu Z.Y, 2015), the precise connection has been established between rewards as motivation for decision makers to read BI reports, create own BI analytic reports, share those BI report within organization and desire for good decision making. This connection comes from the expectancy theory which proposes "that decision maker, will be motivated to exert a high level of effort when he/ she believes that effort will lead to good performance and that good

performance will lead to desired rewards” (Chang Y.W., Hsu P.Y., Wu Z.Y, 2015). The decision maker will strive to have more information possible which will improve correctness and quality of the decision. As managers are getting used to making decisions with information to enhance the accuracy of the decision and to convince others that the decision is based on solid facts (Devenport T.H. and Haris J.G., 2007). The decision maker will be motivated to read analytical products, but at the same time, he will be willing to create his own reports and analytical product using BI tools. This motivation is coming out from tangible rewards that he/she can expect for achieving good results that will come from a desire to make a right decision.

3. CONCLUSION

Nobel-prize-winning psychologist Daniel Kahneman has said that overconfidence is the bias he'd eliminate first if he had a magic wand (Walter, 2018). Still, intuition and self-confidence are important elements of the decision-making process, especially with unstructured business problems, where automatization and repetitiveness are not occurring. Slowly but securely, the decision based on intuition and authority gives up its place to the informed and on truth based decision. “Gut feeling” of HiPPOs is not sufficient anymore to secure competitive advantage through decision quality. Making a strategic decision without the support of real-time data and information analysis is almost unimaginable. With the new technological improvements and software capabilities, there is a possibility to extract hidden connection and to get insights from the data that the company accumulates through its business activities. Decision makers have to possess sufficient knowledge, capabilities, and willingness to read analytical products. They have to work closely with the analyst to create a framework for support in decision making. As the quality decision is one of the key ingredients necessary for making competitive advantage, achieving this, BI professionals have to be as close as possible to the decision makers at least because of three reasons. First, BI experts have to learn the specificities, stiles, and requirements of decision maker in the decision-making process. Second, C-levels has to secure and insists on implementation of BI culture throughout the organization, to have a constant flow of structured data, to strive towards “one truth” if possible, and to use BI product for strategic, tactical and operational decision. Third, the only symbiosis of the decision maker, as a user, and BI experts, as producer of data insight, can produce positive synergetic effect improving quality of decision making and consequently improving the competitive position of the organization at the market.

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PROCES ODLUČIVANJA U KONTEKSTU POSLOVNE INTELIGENCIJE 3.0

Sažetak

Poslovna inteligencija (BI) ključni je alat za donošenje kvalitetne odluke koja se temelji na činjenicama. Pomaže donositeljima odluka da donesu pravodobnu i pravu odluku. Koristeći se BI rješenjima, donositelji odluka mogu poboljšati kvalitetu odluka te biti učinkovitiji u ispunjavanju poslovnog cilja i tako pridonijeti konkurentskoj prednosti organizacije. Samo BI rješenja i alati nisu dovoljni za konkurentsku prednost. Visoko kvalificirani kadar treba se aktivirati kako bi se iskoristio puni potencijal BI rješenja i kako bi bio most koji povezuje specifično i stručno analitičko znanje. U tom smislu, ako se poboljšava organizacijska ambidekstrija, poboljšava se i kvaliteta odlučivanja. Konačni BI proizvodi i saznanja bit će korisni samo ako ih donositelji odluka upotrebljavaju na svim razinama odlučivanja. Organizacija treba poduzeti motivacijske korake kako bi osigurala da menadžeri čitaju, pripremaju i razmjenjuju BI proizvode. Standard za odlučivanje „HiPPOs“ (najviša plaćena osoba u organizaciji donosi odluku) trebao bi postati relikvija prošlosti, a novi proces odlučivanja trebao bi se temeljiti na podacima i inteligenciji. Rad se sastoji od triju dijelova. Prvi dio daje pregled teorijskog razmatranja procesa donošenja odluka i uloga menadžera. Drugi dio prikazuje BI sustav, sa svim njegovim elementima, kao neophodan alat za kvalitetno donošenje odluka. U trećem dijelu donosi se zaključak.

Ključne riječi: *Poslovna inteligencija, decision-making process, decision, data, ambidexterity, analyst.*

JEL klasifikacija: *D80, L20, M21*

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