In this issue:

Manuscript Submission and Information for Authors
PAGE 3

Tuomo Takala, Tommi Auvinen, Janne Tienari, Pasi Sajasalo, Suvi Heikkinen, Jean Helms Mills & Minna Kallinen-Kuisma
Special issue: Implications of Digitalization on Organizations and Leadership – Esports, Gamification and Beyond
PAGE 4

Adenekan Dedek
A Risk-Based Approach for Mitigating Ethical Lapses
PAGES 5-9

Anniina Kinnunen
Institutionalization of Strategy and Management Accounting Change in a Cooperative Bank
PAGES 10-19

Dinesh Poudel
Making Sense or Betting on the Future? Identifying Antenarratives of AI projects in a Large Financial Organization
PAGES 20-33

Esa Mangeloja
Economics of Esports
PAGES 34-42

Niilo Noponen
Impact of Artificial Intelligence on Management
PAGES 43-50

Ville Malinen
Radalta Laajakaistalle? E-urheilun ja autourheilun välinen suhde ja tulevaisuus F1:ssä
PAGES 51-61

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Editorial objectives

Electronic Journal of Business Ethics and Organization Studies EJBO aims to provide an avenue for the presentation and discussion of topics related to ethical issues in business and organizations worldwide. The journal publishes articles of empirical research as well as theoretical and philosophical discussion. Innovative papers and practical applications to enhance the field of business ethics are welcome. The journal aims to provide an international web-based communication medium for all those working in the field of business ethics whether from academic institutions, industry or consulting.

The important aim of the journal is to provide an international medium which is available free of charge for readers. The journal is supported by Business and Ethics Network BON, which is an officially registered non-profit organization in Finland. EJBO is published by the School of Business and Economics at the University of Jyväskylä in Finland.

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As a guide, articles should be between 5000 and 12000 words in length. A title of not more than eight words should be provided. A brief autobiographical note should be supplied including full name, affiliation, e-mail address and full international contact details as well as a short description of previous achievements.

Authors must supply an abstract which should be limited to 200 words in total. In addition, maximum six keywords which encapsulate the principal topics of the paper should be included.

Notes or Endnotes should be not used. Figures, charts and diagrams should be kept to a minimum. They must be black and white with minimum shading and numbered consecutively using arabic numerals. They must be referenced explicitly in the text using numbers.

References to other publications should be complete and in Harvard style. They should contain full bibliographical details and journal titles should not be abbreviated.

References should be shown within the text by giving the author’s last name followed by a comma and year of publication all in round brackets, e.g. (Jones, 2004). At the end of the article should be a reference list in alphabetical order as follows:

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Special issue: Implications of Digitalization on Organizations and Leadership – Esports, Gamification and Beyond

Jyväskylä University School of Business and Economics (JSBE) and EJBO Electronic Journal of Business Ethics and Organization Studies invited scholars to contribute to our knowledge regarding digitalization and organizations.

As a result, we are happy to present Implications of Digitalization on Organizations and Leadership – Esports, Gamification and Beyond special issue containing six research articles.

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A Risk-Based Approach for Mitigating Ethical Lapses

Adenekan Dedeke

Abstract

Abstract: In early 2008, the CEO of Volkswagen announced a 10-year plan that called for tripling the company’s U.S. sales by 2018. The executive gave marching orders to engineers to come up with a new technology that would enable VW to lower emissions of the new cars. The engineers failed to come up with a device that could do the job. Instead, they deployed a defeating software that would defeat the testing process.

The 2009 VW Jetta clean diesel was launched in April 2008 and followed by the introduction of similarly equipped VW Golfs and Audi A3s. Over 145,000 vehicles were sold in the U.S. in three years. The scheme was eventually exposed, costing the company millions of dollars. This paper describes the organizational reasons why the emissions cheating occurred. It also provides recommendations regarding how organizations could prevent similar behaviors from occurring in future.

Key Words: Volkswagen, risk-based approach, ethical lapses, ethical traps, emissions cheating

Introduction

In 2015, the executives of Volkswagen (VW) admitted that the company had fitted a cheating software on diesel car models that were sold in the U.S. The software manipulated the operations of the engine during lab emissions test and caused the car to pass test. The engine’s nitrogen oxide (NOx) emissions was up to forty times above the allowed limit. A recall was issued, which ultimately affected 8.5 million cars, including 2.4 million in Germany, 1.2 million in the U.K., and round 500,000 cars in the U.S. Evidence showed that many VW employees knew about the cheat software, but they kept silent about it.

There were few factors that made this case significant. First, VW had a well-developed code of ethics at the time the fiasco occurred. Second, VW had a comprehensive Risk Management System and Internal Control System (RMS/ICS). Volkswagen’s RMS/ICS system was based on the internationally recognized COSO Enterprise Risk Management Framework standard (Volkswagen, 2013). Given that VW adopted these systems, there is grounds to wonder why could the ethical lapse have occurred?

However, this is not the only case that justifies the need for an inquiry. In 2014, General Motors (GM) issued a recall of its small cars which had faulty ignition switches. The component could shut off the engine during driving and thereby prevent the activation of airbags. That recall affected nearly 30 million cars worldwide and caused over 100 deaths. Evidence also showed that GM employees knew about the fault for at least a decade and took no action about it (BBC, 2015; Shepardson, 2015). Similarly, GM also had an ethical code and a compliance management system implemented during the faulty ignition switches fiasco.

These facts lead to two conclusions. First, the implementation of compliance management systems does not necessarily eliminate ethical lapses in organizations. Second, the facts also suggest that a common explanation for the failure of compliance management systems, which is the notion of ethical blindness, does not explain the ethical lapses in these cases. The concept of ethical blindness posits that actors unknowingly act unethically, because they are temporarily “ethically blind”. The argument claims that compliance systems fail because rational people using such systems are unable to see the ethical consequences of their actions (Kump and Scholz, 2016; Palazzo, Kring, and Hoffrage, 2012).

In the cases of GM and VW, given that the employees hid their actions, one can deduce that they were indeed aware of the ethical consequences of the actions. So, the concept of ethical blindness does not offer a plausible explanation for their actions.

In contrast, we argue that many unethical choices happen because people fall into unscrupulous thinking traps. For example, people fall into the trap of thinking that their unethical choice in merely an “exception to the rule” that is “unavoidable.” Also, there is the trap of thinking that “we can get away with” something we are intending to do. In the paragraphs below, we will use the case of the Volkswagen emissions fiasco to describe six thinking traps and how to avoid them.

Volkswagen Fiasco – In Brief

Consider the Volkswagen (VW) emissions fiasco. In 2005, Volkswagen had nearly 19% market share in Western Europe but only 2% in the United States. The Chief Executive Officer of VW determined that if the company could combine performance, modest price, and environmental appeal, it could become the largest automaker in the world. The strategy was formalized by the then-CEO Bernd Pischetsrieder and continued by his successor, Martin Winterkorn. In early 2008, Winterkorn announced a 10-year plan that called for tripling the company’s U.S. sales by 2018. Meeting this goal would enable VW to surpass General Motors (GM) and Toyota (TM) to become the world’s largest automaker.

Clean diesel was a central piece of the strategy; however, there was a major hurdle. The California Air Resources Board (CARB), acting on its delegated powers under the Federal Clean Air Act, had enacted strict nitrogen oxide (NOx) emis-
The 2009 VW Jetta clean diesel was launched in April 2008 and followed by the introduction of similarly equipped VW Golfs and Audi A3s. Over 145,000 vehicles were sold in the U.S. in three years. In July 2008, a member of Audi’s environmental certification team learned about the test-defeating software that had been installed. In spring 2008, VW executives were aware that they could not meet the emission standard, they realized that anything was impossible. Rather than telling the executives that they could not meet the emission standard, they decided to manipulate the results of the emission test.

The engineers were under intense pressure. They designed a new component that was called the lean NOx trap. Unfortunately, they could not get it to satisfy the NOx requirement, at least not without unacceptable impacts on fuel economy or drivability. However, the teams deemed it unacceptable to admit that anything was impossible. Rather than telling the executives that they could not meet the emission standard, they decided to manipulate the results of the emission test. The engineers were aware of a cheating software that had been developed for the Audi in 1999. The software was also installed in diesel V6 SUVs in Europe from 2004 to 2006. To meet their deadlines, the engineers decided to adapt the cheating software for the new diesel engines they were designing. The technique was simple: The software was programmed to detect when a test was being done in the lab versus when a driver was driving on the road. During a lab test, the engine performance was changed to lower emissions. When the vehicle was being driven on the road, the software noticed the change and stopped its suppression of engine performance. This deactivation caused the NOx emissions to go back to its actual level, which was up to forty times higher than the legal limit.

Moreover, the engineers felt confident that the defeating software would go unnoticed because the existing technologies lacked the capability to detect it. In spring 2008, VW announced the new engine with its lean NOx trap. This engine was marketed as the next-generation turbo diesel engine for the North American market. The central selling point of the car was that it featured a clean, high-performance diesel engine.

The 2009 VW Jetta clean diesel was launched in April 2008 and followed by the introduction of similarly equipped VW Golfs and Audi A3s. Over 145,000 vehicles were sold in the U.S. in three years. In July 2008, a member of Audi’s environmental certification team learned about the test-defeating software. He wrote to the engineering team stating that the software was “indefensible.” Nevertheless, the U.S. introduction went forward anyway. All the while, senior executives claimed that they were unaware of the emissions test-defeating software. Three years later, a research center in the U.S. discovered the software cheating scheme. We find that some specific thinking patterns, also called thinking traps, that one observes in the VW case, provide some foundation for explaining why the employees acted opportunistically. After we present these thinking patterns, we will propose a risk-based approach as a means for creating an organizational culture, where employees are less vulnerable to the thinking traps.

**Why Do Ethical Lapses Occur?**

NO GOAL IS IMPOSSIBLE TRAP. It is true that great accomplishments have been achieved in life in part because the actors set high expectations. Yet, should one embrace this as a universal maxim of life regardless of the plan, resources, and results? If a group is running out of resources, is reusing the same plan, and is accomplishing worse results, an unrealistic goal becomes a trap rather than a winning strategy. There is research-based evidence that shows that unrealistic performance targets create ethical conflicts for employees. Employees are either forced to lie or to cut corners (Carucci, 2016). In the case of VW, the executives likely set an unrealistic performance target. They wanted to defeat the number one and two auto companies in the U.S. and ultimately become the number one car maker in the world. The executives also wanted to engineer a new technology for reducing NOx emissions. The more unrealistic a performance target is, the higher the risk of failure, and the pressure felt by employees. What makes unrealistic targets counterproductive is that they set people up to fail. Rather, executives need to set high targets and realistic goals. This trap set the stage for the decisions that the VW engineering teams made.

FAILURE-IS-NOT-AN-OPTION TRAP. The VW executives also exhibited a “failure is not an option” mindset. This is deduced from specific actions that they took and the actions that they did not take. First, as far as we know, they did not set a contingency plan. Second, they eliminated the use of the licensed SCR component, which would have been a workable backup to use in place of their lean NOx trap. They also assigned the task to two different engineering teams, signaling the importance of the project succeeding. On one hand, this assignment of the special task to these two teams showed the degree of trust that the executives had in them. On the other hand, that trust changed the context for the engineers. They were no longer working on a solution for the NOx emissions problem; rather, they also had to prove that the trust that was extended to them was merited. The reputation of each group was on the line. It is no wonder then that the engineers embraced the “failure is not an option” mentality too. The executives, knowingly or unknowingly, created an organizational context which fostered the “failure is not an option” mentality.

THE END JUSTIFIES THE MEANS TRAP. Whenever there is a goal that requires difficult tradeoffs, such as the engineers faced, success could be defined in at least three ways. The engineers could meet the NOx requirement, they could admit defeat, or they could defeat the test. They decided to defeat the test. The option that they chose reveals that they succumbed to the “end justifies the means” trap. In a sense, their choice could be rationalized as being an “exception to the rule” and an “unavoidable choice.” The attractiveness of the “end justifies the means” trap tends to be stronger when the stakes are
high and when the actors are very close to a desired objective. In the case of VW, the engineers worked hard to produce the lean NOx trap. They were so close to the finishing line of their project. The only problem was that the engine was failing the test. This created the incentive for the engineers to seek a way to defeat the test.

THE CONSENSUS GRANTS LEGITIMACY TRAP. The case summary shows that the decision to select the emissions test-defeating software was a consensus decision among the engineers in each team. Consensus is ordinarily interpreted as a means of providing legitimacy to a choice; however, there are limits to such a notion. For consensus to be a valid method for legitimizing choices, the agents making the decisions should be non-biased or independent. Given that the engineers who were making the decisions were under pressure and invested in the success of the venture, their consensus was likely tainted by their biases. The condition of being invested in the outcome likely biased the consensus of the engineers, making them favor a quick-fix remedy rather than encouraging them to objectively see the software as a moral violation.

THE UNDETECTABLE SCHEME TRAP. One of the observable lessons of the case was that the engineers falsely believed that the emissions test-defeating software was going to be undetectable. They came to this conclusion because they did not find any testing machine that was equipped with the capability to detect cheating software. Unfortunately for them, the Achilles’ heel of every “undetectable deed” is that things change. Sooner or later, a method, process, or action will be introduced which will detect “undetectable deeds.”

THE YOU’RE BETTER OFF SAYING NOTHING TRAP. The VW case also highlights the dangers of collective silence in an organization and how it impacts unethical choices. In the VW case, neither of the two teams that installed the emissions test-defeating software notified the executives about it. Similarly, when Audi’s environmental group got the information about the software, they protested to the engineering group that it was indefensible, but there is little evidence that any Audi employee reported the issue to the executives. There was a collective employee silence (non-report of critical information to executives) which caused the unethical behavior to persist longer than it otherwise might have. Collective silence is usually an intentional choice that is embraced to protect an employee’s or a team’s self-interest. If employees believe that what they say can be used against them, they will be vulnerable to the trap of keeping silent. They say can be used against them, they will be vulnerable to the trap of keeping silent. For example, employees are less likely to report unethical behavior if they perceive that it is not in their interest to do so. It was not in the interest of the engineers to report their own unethical behavior to the managers.

Employee silence might occur because of a structural Conflict of Interest (COI) between employees and their employers. Monzanni et al. (2018) argued that workers faced a dilemma in choosing between the short-term interests of their leader, who might perceive voicing problems as being disloyal, and the long-term interests of the organization. This COI may have contributed to the reasons why employees within VW manifested collective silence when they heard about the emissions test-defeating software.

Making Ethical Lapses Less Likely in Organizations

Risk-based ethics approach. Unfortunately, in most organizations, ethics programs are designed to create ethical awareness rather than to mitigate ethical violations. Why? Because many ethics programs do not treat ethical violations as an ongoing threat. Rather, too many ethics programs adopt a compliance-based approach. Specifically, organizations create a code of ethics, they train their workers about ethical norms and the values of the organization and hope that everyone follows the training. A more proactive approach for an ethics program would treat ethical violations as an ongoing threat. In this type of ethics program, a risk-based approach would be needed to manage ethical violations.

The focus on managing ethical violations that we propose is akin to how firms achieve better quality. To achieve better quality performance, a firm must implement an ongoing system for lowering the occurrence of defects. Similarly, to have an ethical culture, a program must be implemented that includes interventions to avoid the occurrence of ethical violations. We call this a risk-based approach for managing ethical violations. The phases of the risk-based approach that we present here were derived from established risk-based frameworks, such as those that have been successfully used in the field of cybersecurity (NIST, 2018). The risk-based approach for managing ethical violations has four phases. Namely, prepare, prevent, respond, and restore. This means that a risk-based approach requires the investment of resources in four phases. In contrast, in firms that adopt compliance-based ethics programs, most of the resources are invested in the prepare phase. Hence, if an ethical violation occurs in a compliance-based context, the damage is likely to be high and the cost to recover could be significant. In contrast, the adoption of a risk-based approach encourages both early detection and early intervention actions to mitigate ethical threats before they have time to spread and cause more significant damage. In the following sections, the paper will describe each phase of our risk-based framework and its related activities.

Prepare: The purpose of this phase is to deploy ethical components and structures that are intended to limit or mitigate the threats that are posed by ethical thinking traps. Relevant components in this phase include the creation of an ethical code and the institution of governance structures for managing ethics in an organization. This phase would also include requirements for ethics awareness training for staff and ethical decision-making training for managers. An organization would also institute ethics compliance controls, such as conflict of interest declarations, background checks, certificate verification, procedural audits, enforcement audits, and work experience verification. It would also be relevant to design and adopt tools for information gathering and reporting, such as reporting protocols, ethics surveys, and performance reviews and evaluations.

A key component that should be considered in this phase is the integration of ethical transparency and feedback mechanisms across the structure of the organization. For example, peer-review norms could be instituted whereby the resolution of ethical issues includes blind or non-blind feedback from independent peers.

Prevent: The central purpose of the activities that are deployed in this phase is to enable early discoveries and early interventions that would mitigate ethical violations. A key focus of this phase is the deployment of safeguards. An analogy for this phase is the circuit-breaker. A circuit-breaker is an ongoing preventive mechanism that stops equipment from being destroyed by unpredictable surges of electric voltage. In the same sense, every organization adopting a risk-based approach to ethics should carefully implement multilayered preventive controls that mitigate ethical violations in an ongoing manner.

For example, there should be controls that would enable an organization to discover either gaps in the existing ethical

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standards, practices, and controls, or to identify emerging ethical violation opportunities that require new procedures or policies. Such discovery and intervention activities would enable organizations to act before ethical threats fester into bigger ethical challenges. In this phase, the governing structures should incentivize employees to report unrealistic performance targets or goals to executives. Peer-review teams should be actively engaged in evaluation and give feedback about major “exceptions to the rule” decisions that were made in departments. Team leaders would be expected to include in progress reports information about ethical peer-reviews, emerging flaws and surprises in plans, resourcing constraints, and project tradeoffs. The reporting of tradeoffs that might have ethical implications and risks would be essential. Also, the prevent phase will be fruitful if the executives create a context in which all employees have a way to discuss and report perceived gaps, conflicts, and lack of clarity in organizational policies, rewards, bonuses, standards, and practices. Finally, an organization would also monitor the effectiveness of its mechanisms and incentives by documenting if they are making it more likely that employees see it as being in their interest to report ethical concerns rather than to be silent.

Respond: The purpose of the activities in this phase is two-fold. First, to act on the feedback, concerns, and gaps that were identified in the prevent phase. Second, the respond phase is about acting to resolve ethical violations that have become known. The respond phase would be effective if the action is timely, and if the investigations and processing are transparent and fair to all parties. Processes that protect the interests of all parties are likely to come to better resolutions. After a major ethical violation, the respond phase would include timely notification of affected persons as well as the institution of damage mitigation actions. Similarly, the respond phase would include dissemination of information and interaction with concerned staff, customers, and other stakeholders. This means that the provision of accurate information across different communication channels would be necessary. The adoption of activities that may contribute to a positive response experience could include the deployment of guidelines and standards for the review of ethical cases. Also, the deployment of a transparent process for evaluating and punishing ethical violations would be useful. It would also be critical to offer an appeal’s process to employees and managers, and procedures for protecting the identity of whistle-blowers, the accused, and those who offer testimonies.

Restore: The purpose of this phase is to implement corrections based on the lessons learned from the prevention and response stages. In some cases, the restoration phase might involve the payment of compensation and damages. It might also involve employee reassignment and/or promotion. In regard to policy changes, there might be requirements for the justification and formal acceptance of new policies. The restoration phase would require different levels of information sharing, such as to individuals and groups within the organization, to customers, and to the public. The restore phase has the goal of restoring the confidence of stakeholders in the integrity of a company, and to restore credibility to an organization’s claim that it is committed to high ethical standards.

Applying the Risk-Based Approach to the VW Case

If some elements of the prepare stage had been applied at VW, the executives would have had training in ethical decision-making and learned how unrealistic expectations foster unethical behavior among employees. Also, the firm instituted feedback mechanisms across the structure of the organization, such as blind or non-blind peer-review feedback, teams of executives would have had the opportunity to discuss the contingency plans to the strategic plan. If one or two contingency plans had been created, the strategic plan would have had three ways to succeed rather than one. If there had been three ways to succeed, both the leaders and the followers would have avoided the “failure is not an option” trap. The team would likely have avoided the “end justifies the means” trap too. If a team were close to a single goal and there was no other way to win, they might cheat. However, if a team were close to a single goal, but there were other ways to win, they would be less likely to cheat. In the case of VW, the intermediary solution could have been to use the SCR.

If VW had integrated ethical transparency mechanisms across its teams, it could have created procedures whereby members of one engineering group are assigned the task of auditing the work of the other one. Also, it would have assigned the staff of VW’s environmental group to function as an external agent conducting the emission tests. This would have created a situation in which several traps would have been less attractive. The engineering teams would have avoided the consensus grants legitimacy and the undetectable scheme traps. Given that there would be the possibility of overlapping internal audits, the likelihood would be lower that most of the engineers would think that the scheme could escape detection.

Lastly, if VW created a speak-up culture by implementing some of the components of the prevent phase, the leaders would have learned of the ethical violations sooner. For example, Elizabeth Morrison’s book Encouraging a Speak Up Culture identifies two barriers that firms must overcome. Namely, the natural fear of speaking up and the concern that to speak up is futile. To combat these barriers, executives could integrate ethical reporting with progress reports. Progress reports could include information about goals as well as information about ethical concerns, emerging flaws, resourcing constraints, and project tradeoffs.

Organizations that are known for their focus on ethical business practices have elements that show that they are adopting what this paper calls a risk-based approach to ethics. For example, 3M’s ethics policy mandates reporting concerns and suspected violations of the law and the company’s code of ethics. The following is 3M’s (2019) policy of reporting:

“Unless prohibited by local country law, 3M employees must promptly report all suspected violations of the law or 3M’s Code of Conduct by bringing their concerns to the attention of 3M management, 3M legal counsel, 3M’s Ethics & Compliance Department, assigned Human Resources manager, or through 3M-Ethics.com. Supervisors and managers must promptly report all suspected violations of the law and 3M’s Code of Conduct to their business unit’s assigned legal counsel, the Ethics & Compliance Department, or their management. 3M does not tolerate retaliation for reporting violations or suspected violations of the law, or of 3M’s Code of Conduct.”

Adobe maintains an ongoing blog that documents the ideal company culture, why it matters, and highlights Adobe employees who are examples of what is expected (House, 2018). McLaverty and McKee (2016) suggest that managers build and use a strong and diverse personal network when making ethical decisions. This will help avoid some of the traps into which VW employees fell. Also, the authors recommend that executives investigate the ethical signals that their decisions are sending. Who gets hired and who gets promoted send a signal about
what a company really values. Heinig (2018) recommends that companies should emphasize ethics in hiring, retention, rewards, recognitions, and promotions. Sony (2018) also exemplifies how preventive mechanisms could be deployed to mitigate a "culture of silence." It has multiple channels for reporting ethical concerns, and it provides training to managers on how to create an environment where employees feel comfortable speaking up when they observe unethical behavior. It also trains its managers on how to handle reports and how to prevent retaliation. Kaulflin (2017) also noted there is evidence that the leading ethical companies in the U.S. are increasingly providing data to their employees about their responses to ethical issues. For example, more of these firms are disclosing information to their employees about misconduct in their own company, including how many complaints were filed and what was done about the complaints. Previously, in most firms such information was kept confidential. By adopting a risk-based approach, firms can be more proactive about creating organizational cultures which prevent and mitigate ethical violations rather than merely reacting to them.

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Institutionalization of Strategy and Management Accounting Change in a Cooperative Bank

Anniina Kinnunen

Abstract

In this longitudinal case study, a cooperative bank’s strategy, related performance management changes, institutionalization processes, and change drivers are studied. Old institutional economics is used in explaining how organizational routines and rules change and become taken for granted. However, there are several internal and external drivers of change in the banking sector, including organizational culture and values, EU regulation, digitalization as well as communicational gaps and power relations among organizational levels affecting the success of the change process. Results indicate that in the case bank, operating in a highly institutionalized and regulated environment, not many organizational efforts were made to support the institutionalization of new strategy and management accounting change. Efforts were often manager-specific, promoting the status quo, and preventing most change attempts from proceeding towards institutionalization. They caused ‘looping’, repeated small and unsuccessful initial attempts at change, and decoupling. Looping and decoupling took place even though organizational values were internalized well at all organizational levels, and they could be combined with performance management and the different strategies employed over time and at all organizational levels.

Key Words: institutionalization, strategy, management accounting, values, cooperative banking, performance measurement systems

Introduction

Recently, the banking and financial sector have faced notable changes, including Basel solidity requirements, financial technology (FinTech, e.g. Micu & Micu, 2016), political decisions, such as the EU Payment Services Directive (PSD2 transposition in 2018, European Commission, 2019b), and digitalization. This changing competitive environment is urging banks to develop their strategy and business operations, including management control systems and organizational culture (see Auvinen et al., 2018; Sajasalo et al., 2016).

Moreover, in recent years, management accounting change research and studies have been focusing on industries other than banking (cf. Burns, 2000; Burns & Scapens, 2000; Järvenpää, 2007, 2009). Further, the theoretical frameworks used focus mainly on internal actors, although in some industries, external pressures have a great impact on an organization’s operations and management accounting (e.g. universities, ter Bogt & Scapens, 2019). Both external and internal institutional environments affect the institutionalization of management accounting practices, e.g. how management accounting systems are changed and exploited at different organizational levels (ter Bogt & Scapens, 2019; Burns, 2000; Burns & Scapens, 2000; Tucker & Parker, 2015). Further, changes happening at external levels (political, economic and organizational field levels, each including several change factors or drivers) affect internal and organizational level changes as well (Dillard et al., 2004).

The interplay of institutional pressures, strategy, organizational values, and management accounting has not been studied widely in cooperative banking. Nonetheless, e.g. Teittinen et al., (2018) have studied the role of moral values in performance management in the cooperative bank, in which the operating logic may differ from commercial banks using
more global and often centralized corporate or limited liability company form (see e.g. Becchetti et al., 2016). Further, only a few management accounting studies have also taken the operative level into account (e.g. Ho et al., 2014). Obviously, the operative level does not participate actively in strategy processes and management accounting, but the performance measurement systems and performance management have a direct effect on their work (e.g. how they are able to match their targets to organizational values and strategy).

Hence, this case study focuses on both management accounting change and strategy, and also on the initial first steps or attempts (tests) of change (called looping later in this paper) as well as on how they are institutionalized at different organizational levels in OP Helsinki, which is part of OP Financial Group. The research question of this study is:

How are management accounting systems changed and exploited during the institutionalization process of the new strategy at different organizational levels in a cooperative bank?

The data includes 30 semi-structured interviews dating back from 2013 to 2019. They were analyzed using interpretive content analysis (Luukka, 2005). The interviewees represent every organizational level of the case bank: operative level, middle management, and upper management. Since the strategy process is highly related to the organization’s parent company, it is reasonable to also involve interviewees from there. The case bank is located in the Finnish metropolitan region.

The process of institutionalization

Institutionalization is originally a theory from sociology explaining changing processes in societies (Scott, 2014; see also Barley & Tolbert, 1997). In management accounting research, it has been adapted in institutional change framework by Burns and Scapens (2000), in which institutions, taken-for-granted assumptions, and rules and routines affect organizational and management accounting practices in time. It has been used and developed in several studies (e.g. ter Bogt & Scapens, 2019; Busco & Scapens, 2011; Dillard et al., 2004; Järvenpää, 2009; Siti-Nabiha & Scapens, 2005).

Burns and Scapens’ (2000) framework consists of four processes: encoding, enacting, reproduction and institutionalization, which proceed between two of an organization’s internal realms: the institutional realm and the realm of action. When the organization drifts into changing and developing its management accounting control systems, the change starts the process of encoding. During this, existing routines (ways of using the systems) encode institutional systems that have been there before. This eventually creates new rules (systems) and causes the creation and re-creation of the routines used. In the second process, the actors enact the routines and rules, which are questioned and developed. However, it is common that by the time implementation of the new system comes, the actors have started to rationalize earlier routines, which usually leads to resistance to change (Barley & Tolbert, 1997). According to Burns and Scapens (2000), in some organizations, earlier routines and institutions may become immune to change, which actually means that, for instance, implementing new control systems becomes very difficult or even impossible.

Gradually, the rules and routines reproduced and created in the earlier phases become taken-for-granted assumptions; habits and routines that have ‘always been there’ and are unquestioned. These new institutions and routines can either become fully accepted and thus immune to change, or they will eventually be encoded and, thence, the processes start again. Nevertheless, management accounting change may not happen perfectly or entirely according to this model, but the organization might loop their change attempts several times in the realm of action before institutionalizing. Hence, the change may never reach the final process and remains somewhat ceremonial (see e.g. Burns, 2000). According to Tucker and Parker (2015), this kind of ceremonial change is very common in organizations operating in an institutionalized environment. Since banks’ operations are highly regulated and the industry itself is traditional, it is possible for ceremonial changes to occur in them. Additionally, Kinnunen (2018) made similar findings in her cross-sectional case study, and also noted that the strategy and PM systems stayed decoupled, and PM systems were not used to help the institutionalization process of the strategy.

However, Burns and Scapens’ (2000) framework focuses on an organization’s internal, micro-level institutions, whereas studying industries operating in highly institutionalized environments (the banking industry, see e.g. Dillard et al., 2004) also requires external institutions to be considered. Furthermore, ter Bogt and Scapens (2019) also introduce an organization’s external change drivers affecting the process of institutionalization. These are broader institutions and generalized practices. Broader institutions can be seen as taken-for-granted assumptions that are shared in certain professional groups. Generalized practices are behavior typically conducted and expected by external actors who have power over the organization (e.g. in similar, benchmark organizations).

In the banking industry, such powerful external actors are international and national legislators (e.g. the EU and the Basel Committee on Banking Supervision). Two of the latest regulations have been MiFID II and MiFIR, which have urged banks to change their IT systems in order to meet the requirements (European Commission, 2019a). These kinds of massive external demands might temporarily put other system developments within the organization on hold and affect management and management accounting changes as well.

What affects change internally and externally?

There are several internal and external change drivers affecting the success of institutionalization in the beginning and during the process. Discussion on the types of drivers and their effect has been introduced, for example, by Burns & Scapens (2000) and Burns & Vaivio (2001). In the old institutional economics (OIE), there are several dichotomies of how changes can occur. Based on how moderate or radical the beginning of the change is, it may affect how intense the change resistance is. In their article, Burns and Scapens (2000, 18) provide three of these OIE dichotomies: “(1) formal versus informal change; (2) revolutionary versus evolutionary change; and (3) regressive versus progressive change”. Formal change is usually a conscious decision, whereas informal change happens indirectly, for example, based on developed or changed habits and behavior. The evolutionary change affects wider routines, but evolutionary change is gentler since it is usually based on existing routines. In addition, regressive change helps the organization maintain and strengthen its existing, often ceremonial, routines and habits, and on the other hand, progressive change aims to modify them to achieve the best solutions for the organization (Burns & Scapens, 2000, 18–21).

The internal change drivers affecting the success of the management accounting change include the organization, and especially its culture. Busco and Scapens (2011, 323) define organizational culture based on Schein’s (2010, 18) definition, “as
an institutionalised phenomenon which binds time and space through ongoing processes of social interaction”. It is characteristic for the organizational culture to be developed to resist internal and external threats, and usually it is taught to the newcomers as well. Järvenpää (2009) found that an organization also pursuing change in its organizational culture and other systems resulted in successful institutionalization of change.

In addition to organizational culture, power and politics in the organization also have an effect on the success of the change. Hardy (1996, 7–8) divides organizational power into four dimensions: resources, processes, meanings, and system, of which especially the power of system can be understood as an institution. The power of resources is used to control, for instance, incentives and punishment, funding, and employment contracts. The power of processes includes how and by whom organizational processes are planned and decided, and one example of this is whether the strategy is decided and implemented top-down or bottom-up. The power of meaning, on the other hand, is inside the organizational symbols, rituals, and language. Furthermore, Hardy (1996) found that successful organizational change requires the use of several of these dimensions. Burns (2000) and Battilana and Casciaro (2012), as well, state that if the change is too incomplete or the dynamics inside both the department and the organization are not supporting the change, it may cause conflicts between and inside organizational departments.

Further, the power of humans has a strong impact on acceptance and institutionalization of change as well, since people naturally have different tendencies to resist or accept the change (e.g. Giddens, 1984). Innovators constantly seek new and improved ways to operate, and are usually more open to change, whereas the late adopters need more time to process and eventually adopt the change (cf. diffusion model by Rogers, 2003, see e.g. Askarany, 2006). Additionally, they can react to change differently, causing positive or negative ambiance amongst their colleagues.

If the change is heavily challenging and threatening the organization’s existing institutions, it is usually harder to implement (cf. OIE dichotomies, Burns & Scapens, 2000). Thus, it might also be strongly resisted. Burns and Scapens (2000, 17) divide this resistance to change into three elements, which can also be rather hard to anticipate: 1. “formal and overt resistance due to competing interests; 2. resistance due to a lack of capability (knowledge and experience) to cope with such change; and 3. resistance due to a ‘mental allegiance’ to established ways of thinking and doing, embodied in existing routines and institutions.”

In addition, Burns (2000) found so-called ceremonial change, which may seem to be, and is perceived as, an institutionalized change by the organization, although only a small part of it is implemented. In management accounting, this kind of ceremonial change leads the accountants and organization to focus more on accounts and numbers themselves instead of actually using and analyzing them for decision-making. Further, organizations may end up keeping their official procedures separate from their everyday practices, causing decoupling (e.g. Tucker & Parker, 2015).

According to Dillard et al. (2004), OIE is good when studying organizational level/internal actors, but for understanding the effects of external change drivers, it is not suitable. Hence, their framework introduces external institutions at the economic and political level, organizational field level and organizational level affecting the institutionalization of organizational practices. Economic and political level drivers include national and international regulations and legislation, whereas organizational level drivers include competitive situations and comparison to other organizations operating in the same field. Although their framework cannot be used to explain how strategy and management accounting change institutionalize within the organization, it can give perspective on understanding how or why the institutionalization either succeeds or fails.

Strategy and management accounting
Strategy is the organization’s mid-term objective, which on the one hand leads towards the organization’s long-term vision, and on the other hand is supported by the organization’s short-term plans, including budgets. According to MacIntosh & Quattrone (2010), strategy is considered to be a management’s cornerstone, which is used to combine management with the organization’s mission. Furthermore, management’s strategic decision-making is often supported by management accounting, which provides relevant information for management (Langfield-Smith, 2008).

However, there is no one simple opinion that is considered as relevant information. In some organizations, the focus has mainly been on the numerical and financial information, whereas in several studies it is argued that management accounting providing information for strategic decision-making should also include non-financial information, e.g. balanced scorecard (BSC) (Bhimani & Langfield-Smith, 2007; Lord, 1996). In the past decades, strategic management accounting studies have focused on certain techniques, including activity-based costing, strategic cost analysis, and strategic performance measurement systems (Langfield-Smith, 2008). In this paper, the focus is on a strategic performance measurement system (i.e. BSC), which is used for gathering data from operative level performance, and performance management, which traditionally has focused also on individual employees (Smith & Goddard, 2002).

There are several and somewhat obscure definitions of performance measurement systems based on the approach and field of the research (Franco-Santos et al., 2007). In the case bank, BSC can be seen as a performance measurement system (or tool) for managing and combining employee performance with the strategy and for providing information for the case bank’s and its parent’s executive boards (see e.g. Franco-Santos et al., 2007). Thus, in this case, performance management can be defined as “… an integrated set of planning and review procedures which cascade down through the organization to provide a link between each individual and the overall strategy of the organization” (Rogers, 1990, as in Smith & Goddard, 2002, p. 248).

Additionally, MacIntosh & Quattrone (2010, 153–154) argue that strategy can be seen as an ideological tool of control. That is, all the values, beliefs, routines and personal career goals create one complex package, i.e. ideology. When the strategy is based on this ideology, it is called the ideologically controlled organization. In that case, individuals are already acting according to the ideology, and the strategy can be more easily implemented or even institutionalized.

Methodology
This paper is a qualitative case study focusing on one subsidiary bank unit in a Finnish cooperative bank organization. Thus, this can be seen as a single case study in which, for instance, organizational processes, tensions, and social dynamics provide a rich background for studying phenomena in a specific context (Vaivio, 2008). The case bank, OP Helsinki (HOP), is the
biggest local bank in the OP Financial Group, employing almost 500 people. It is also the only bank unit that is a subsidiary to the OP Financial Group, whereas other local bank units are cooperative member banks. Hence, the case bank’s unique characteristics provide an interesting context for studying strategy and management accounting changes.

This study represents the interpretive paradigm, in which the phenomena in the social world are studied and experienced subjectively (Burrell & Morgan, 1979). Organizational operations including processes, management accounting, and decisions are thus not necessarily predictable and rational but, for instance, organizational actors may have conflicting demands and opinions (Vaivio, 2008). Interpretive qualitative methods give tools to take human actions, social structures, and organizations’ internal tensions and worries into account as they may affect organizational success and failure (Parker, 2012; Scapens, 1990).

In this paper, the empirical data collection mainly occurred using semi-structured theme interviews in which the themes included strategy process, organizational values, performance management, and digitalization. The researcher belongs to the research group, which has been able to gather over 200 interviews in the OP Financial Group from several group member cooperative banks, parental organizations and its subsidiaries in the past decade. However, in this single-case study, the focus is on how strategy is institutionalized in a local organizational unit. Thus, 30 interviews conducted in the case unit, which had had strategy change during the interview rounds, were selected from the data. The selection of interviewees was based on relevant combinations of themes discussed in the interviews, i.e. strategy process and performance management, and the organizational level of the employee. Eight of the interviewees represented the operative level, nine the middle management, nine the HOP’s executive board, and four the OP Financial Group’s executive board. Twenty-five of the interviews were made during 2013–2015 after the strategy implementation and five in 2018 and 2019 after group-level strategic changes.

The interviews were analyzed using theory-based content analysis. In theory-based content analysis, the used theory gives a ready-set approach and concepts for studying the phenomenon, which, according to Hsieh and Shannon (2005), can help anticipate possible relationships between codes used. Furthermore, findings either support or disagree with the existing theories and thus develop them.

Findings

Case organization

The case organization, OP Helsinki (HOP), is a subsidiary company for the biggest Finnish cooperative bank, the OP Financial Group. In 2018, the OP Financial Group had 1.9 million owner-customers and 156 group member cooperative banks, who own the cooperative parental organization. The OP Financial Group is led by the President and Group Executive Chair (henceforth the President). The HOP case bank is led by the CEO and is the only bank operating as a subsidiary; the rest of the nine subsidiaries offer services for all of the group member banks, the case bank, and the cooperative parental organization. HOP’s EBIT was 28.7 million euros in 2018, and OP Financial Group’s EBIT was 1,017 million euros (OP, 2018a; 2018b). Interestingly, it has been a common impression that the largest banks of the group make most of the profit for the whole group, but based on these figures, it does not appear to be like that in HOP’s case.

During the research period, there were several internal and external changes happening in both HOP and the OP Financial Group. Although this study focuses especially on PM and strategic changes, other changes or developments can affect them (cf. Järvenpää, 2009). Hence, some of these changes have been introduced in this chapter and in table 1.

<table>
<thead>
<tr>
<th>Internal</th>
<th>External</th>
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<td><strong>HOP level</strong></td>
<td><strong>HOP level</strong></td>
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<tr>
<td>- 3 CEOs during the period</td>
<td>- EU regulation (MiFID II and MiFIR)</td>
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<tr>
<td>- Strategy “Leading bank in 2025 in the metropolitan region” implemented in 2013</td>
<td>- Group level system developments to meet the new regulations</td>
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<tr>
<td>- PM system changed before the research period</td>
<td>- OP group strategy outstripping HOP’s own strategy</td>
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<td>- Need for additional Excel spreadsheets</td>
<td>- Group’s digitalization and AI</td>
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**The OP Financial Group level**

- The strategy changed in 2016: “Diversified services company”
- The President changed
- Steps back from the 2016 strategy (2018)
- 5 must-win battles implemented to every subsidiary and cooperative member banks, outstripping HOP’s own strategy
- Digitalization and AI, including customer service robots and mobile apps
- Merging with POHJOLA causing cooperative negotiations
- EU regulation (MiFID II and MiFIR)
- System developments to meet the new regulations

Table 1. Internal and external change drivers in the case organization during the research period

Right before the research period, HOP had changed its strategy to “Leading bank in 2025 in the metropolitan region.” The strategy was HOP’s own, but it was consistent with the group strategy and got approval from the group. During the 2010s, the group strategy process proceeded in 3-year cycles, and at the beginning of the research period, the cycle was not implemented to every subsidiary and cooperative member bank. Thus, the group member banks’ strategies did not necessarily follow the same timelines or target setting as a parental organization, although the organizational strategy-process has been a top-down approach (e.g. Kinnunen, 2018; Sajasalo et al., 2016). The organizational values, however, remained static and were similar for the whole organization during the review period: people-first approach, responsibility and prospering together (OP, 2019).

During the research period, the group had changed its strategy to “Diversified services company”, which aimed at exceeding “traditional industry boundaries” (OP, 2016). This strategy change did not have direct effects on HOP’s strategy. Nevertheless, after the change of the President in 2018, the group strategy was rethought and it was clarified to five key areas, or “must-win-battles”, which was in some interviews considered as stepping back to basic banking. These developments also affected the independence of the group member banks, and they no longer had their own strategies and targets, but took the pa-
rental strategy as it was and chose targets from the ready-made template. The case organization’s strategy timeline continues until 2025, but the parental strategy has outstripped it, and by the end of the research period, its role has become a mission instead of strategy.

In addition to these strategic changes and developments, the case organization had faced several changes already in a few years before the interviews: they had changed some of their IT systems, including PM and CRM systems; HOP had had co-operation negotiations, causing redundancies and re-organizing the structure; their CEO had changed; and they were starting to implement new strategy. During the period under review, the CEO of the organization changed twice (later referred to as CEO 1, 2 and 3) and the regulations, including MiFID II, forced the organization to develop their IT systems to follow the new regulations. Further, the technological development in society has proceeded so rapidly that, during this time, the mobile apps, robots, and other digital improvements have changed the way of business and customer service.

According to Järvenpää (2009), MA change can be successful if other organizational changes are not preventing (or even supporting) it. Although there were several organizational changes at the group and local level during the research period, the changes were made to enhance business, whereas financial accounting practices largely remained the same, i.e. were at least not supporting accounting or MA changes. Some of the changes, e.g. the “5 must-win-battles”, seemed to be made in order to legitimate and maintain existing organizational culture and institutions. Hence, the MA change also remained somewhat ceremonial and did not go beyond initial attempts of change (loopings).

Operative level

Eight of the thirty interviews were made at the operative level of the case organization. The interviewees represented three of the four business segments and two of them worked as a controller.

About a year before the research period, the organization had changed its IT systems, including PM and CRM systems. At the beginning of the implementation, there had been several issues and difficulties, causing the operative level to use additional Excel spreadsheets for monitoring their performance. Although the systems had improved later, the operative level was not ready to trust them. Especially in the beginning of the research period, it was rather common to use ‘multi-entry bookkeeping’, i.e. personnel had to enter their outputs (sales of loan insurances, customer meetings, etc.) into several different and partly overlapping databases, and additional Excel spreadsheets in order to keep on track with their performance targets. Although the performance measures were customized for every business segment and, thus, their need for additional spreadsheets differed, every interviewee had to use some additional spreadsheets. Some of the interviewees were frustrated about this and some were so routinized with their Excel spreadsheets that they did not question their use.

According to the middle management, the new systems should have been extensive enough to substitute the multi-entry bookkeeping, and on the other hand, according to the HOP Executive Vice President, the need for additional Excel spreadsheets results from wishes to set targets, which do not come directly from the systems. However, the scorecard for the operative level was Excel-based, and it was created and operated by the controllers. Although, during the research period, the use of systems got better and more routinized and the targets selected were fitted with the system reports, the need for Excel spread-sheets remained in some business segments. Further, ongoing digitalization did not seem to affect HOP’s PM systems, but e.g. mobile apps and customer service robots were additional tools for the operative level to use in their work.

During the cooperative negotiations, the controllers were re-organized to work for the parental organization. Because of that, they were given more duties and they no longer worked in the same building with their former co-workers. This caused more stress and confusion, since they had to create and supervise the new scorecards, but they were unable to get the same kind of direct feedback from the field that they were used to. There were also a lot of misunderstandings and information gaps between the controllers and the business controllers and CFOs, who stayed at the case bank. Although the controllers were still able to participate in strategy processes and setting the targets together with the HOP executive board, their duties had changed more towards reporting and improving the systems with the ICT department instead of actually analyzing the data:

“In my opinion, the reporting should support management’s decision making and preferably being more than just swatting the numbers, since it doesn’t... Or okay, you see how it has gone, but I wished more some kind of analytical role” (Controller, operative level.)

The targets for the operative level were either monetary-based or measured by the number. In some segments, the employees were ranked based on their scorecards. However, the performance reviews were founded on the scorecards but the discussions focused mainly on other relevant and qualitative issues affecting their performance. Most of the employees felt that although their targets were high, their managers and the whole organization appreciated their efforts and they were applauded for their success. Nevertheless, the interviewees complained about the ambiguity and unfairness of the reward systems.

After the cooperation negotiations, the CEO 1 started the strategy implementation process with great enthusiasm and visited every bureau of the organization to introduce and tell more about the new strategy and the ethical values of the organization. Thanks to these CEO 1 visits and additional value training days, every interviewee recalled the strategy and at least two of the three values at the beginning of the research period. However, they were confused about how the strategy would be achieved in their everyday work. According to the HOP executive level, they did not want to add more stress to the operative level with too detailed information, but this approach was not suitable for most of the operative level interviewees.

“We would like to ask the CEO 1 that what they’re going to do to support our strategy. That we want to grow with this speed and we would need some provisions for that.
— These kinds of things have not been told. Now everyone does the way (s)he thinks is the best. So that does not seem to be that controlled.” (Operative level employee.)

Furthermore, most of the interviewees felt they were able to work based on organizational values and their targets could be combined with them. However, in the business segments where the external competitive situation and thus also the strategic targets were more intense, the interviewees felt that the organization did not provide moral support for them to combine the organizational values and performance targets in everyday
work:

“Of course, this bank has been trimmed to be a hard scoring machine, so how ethical our operations can actually be. That in that value base we have, all the thoughts are super ethical, but I'd like to see them in action too. — In very intensive competition, the values can be left aside, and the sales dominate” (Operative level employee.)

A few years later, the values of the case organization were still well recalled, but the strategy, on the other hand, was almost forgotten and it was seen more like a vision than a strategy. During this time, the CEO had changed yet again (CEO 3) and the discussions about the strategy and all the strategy training days were for the middle management only. Thus, there was no longer strategy implementation, but the focus was mainly on targets. Moreover, some of the regulations, including MiFID II, came into effect, causing more work for the operative level.

In addition to their own ‘multi-entry bookkeeping’, i.e. using several partly overlapping databases, to track their personal performance targets, they had to fill forms and systems so that the legality of customer meetings could be proved. The use of the systems was mainly mechanical, and the level of the digitalization and the functionality of the systems differed between the business segments. Further, the targets for the operative level were no longer based only on the case organization’s own strategy, but also on the parent organization’s strategy. Thus, the effects of the matrix structure increased during the research period.

Although the use of the PM systems got more routinized during this time, it stayed at a very mechanical level. Similar to Scapens’ (2000) findings, in this case, the accounts themselves seem more important than the accounting, i.e. the use of information, which was mentioned also by the controllers. Hence, at the operative level, the strategy and the PM systems were not combined and institutionalized, but their relationship began ceremonially and ended up being somewhat decoupled. However, the meaning of the values and their connection to the PM stayed at a higher level during the whole research period.

Middle management

As the strategy implementation process proceeded top-down, the middle management had an important role in retailing it to their subordinates. However, the middle managers were not given any specific or numeric information on how it was planned to achieve the strategy, but they got annual targets for their units. Every manager recalled the strategy, or as most of them said, vision, but there was no consensus on what it actually meant. Some managers had made their own calculations, as it becomes concrete with these numbers and targets based on the calculations.” (Business controller, HOP executive board.)

Middle management to stay in the realm of action in Burns and Scapens’ (2000) framework.

Management accounting and PM systems, on the other hand, mainly caused frustration amongst the managers, and they knew that the systems and multi-entry bookkeeping “piss the operative level off” as well (Middle manager). After the reorganization and controllers moved away, the managers were unable to have as close cooperation as they were used to. Earlier, the controllers were working only for HOP, but now they also had to work for the group and other branches, so the managers worried that the quality of the reports and cooperation would decrease. Additionally, there had been some significant issues in reporting systems, causing the managers to get outdated information. One interviewee was also worried that most of the reports and information were focusing on figures from the past, although from the strategic point of view, there should be other, more future-oriented, measures besides the customer satisfaction.

A few years later, the middle managers admitted that no one talks about the strategy anymore, but it has become the vision and the parent organization’s strategy has become more dominant. Further, the connection between the strategy and the targets had faded during this time. However, compared to earlier, the weight of customer satisfaction had become bigger, which seems consistent with the prevailing strategy of the group. Although the strategy has been part of the middle management meetings, its role is no longer supported, causing also the middle management to stay in the realm of action in Burns and Scapens’ (2000) framework.

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HOP executive board

The case bank’s executive board participated in the strategy process more than lower levels, although the decisions and guidelines for targets were given top-down from the group. Also, the HOP executive board considered their strategy to be more like a vision or even a mission, but according to them, it was important to implement it in the whole organization in order to keep the organization on the right track. Interestingly, some of the local executive board, the CEO 1 included, felt that it was not important for the operative level to know too detailed information about the strategy, targets and their connection. However, especially the management accountants disagreed with that view:

“Yes, two levels below, the controllers get a target, but they still can’t see how it’s linked to our targets. It is a bit confusing for us to understand the connection.” (Middle controller)

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“Because people should have some more concrete target, at which they aim. If everyone were aiming only at this 2025 target, it wouldn’t become concrete in everyday actions as well as it becomes concrete with these numbers and targets based on the calculations.” (Business controller, HOP executive board.)

Although the HOP executive board did use a lot of management accounting data in their strategy process, they did not create any new or specified strategic targets, but the basic annual targets were, in fact, consistent with the strategy. Nevertheless, not even this information was given to the middle management and thus to the operative level, causing a gap between these levels. This gap might also have affected the decoupling of strategy, performance measurement and management accounting at the lower levels.

Moreover, all the reports the management accountants and the HOP executive board were using differed from those used
at middle management. The local executive board did not seem to know or understand the reporting problems at the lower levels. Hence, they were not able to give more guidelines and instructions for the middle managers so that they would not have to do multi-entry bookkeeping. However, the local executive board was not entirely pleased, either, with the reports they were given, and some of the data were argued to be outdated or irrelevant. The management accountants seemed to be rather satisfied with the reports they got from the controllers. On the other hand, that might have resulted from their more intensive collaboration leading them to know each other better. For instance, one interviewee, who has been working in the organization for years and during the research period had been promoted from HOP executive board to the OP Financial Group, said:

“Yeah, I do have a better chance to get those reports. And with these large organizations… it’s the fact that I have been here for a long time. I know more people. I have probably done something good for these people because I get from them, sometimes I think I get much more than some others who go asking for the same.” (Local executive vice president)

Nevertheless, the amount of the measures and reports the local executive board used was massive, and some of them were not given as ready, but they had to calculate and analyze them more in order to get relevant information for decision-making. Further, some interviewees were worried that the data they got may not have been perfectly objective or true, since the ones who fill the forms and reports might think differently from those who analyze the data. Additionally, the organization had several reporting systems and, since their interface did not work perfectly, there were some differences in the numbers. However, the management accountants had noted the risk and were satisfied with the data, which was truthful enough for their decision-making.

The moral values seemed to be internalized quite well, and the local executive board stated that the values are also guiding the strategy process, target setting, and management accounting. Nevertheless, there was no clear consensus on how actively the values were involved, meaning whether they were more in the background or considered all the way during the processes. According to a local executive vice president, CEO 1’s value-oriented leading helped to understand the meaning of the organizational values. CEO 1’s interest in values and his visits to local bureaus helped to bring the organizational values to every organizational level, and almost every interviewee at every level recalled at least two of three values. Most of them also felt like they were able to work based on those values, despite the fact that at the end of the research period, he was no longer the HOP’s CEO.

As there had been several smaller and bigger changes during the research period, the local executive board seemed to be unable to actually institutionalize the strategy and the management accounting, but the changes were more like looping in the realm of action between the processes of enacting and reproduction. However, the values and the using of reporting systems seemed to have proceeded more towards the institutionalization.

Parental executive board
Although the main focus of this study has been on HOP, based on the organization’s strategy process, it is also relevant to have a few interviewees from the parental executive board. Additionally, the organizational values were decided and implemented by the parental group and were similar for the whole organization. The parental executive board seemed to be able to combine values with their operations, but the connection between the management accounting and strategy could not be clearly found (cf. Kinnunen, 2018). Before and during the research period, the organization had faced massive external and internal changes, including merging with one of the largest Finnish insurance companies, cooperation negotiations, change of the President and EU-level regulations, which affected i.e. their operations, IT and reporting systems and organizational structure.

The digitalization and the IT system updates were mentioned in parental executive-level interviews from the beginning of the research period. The aim was to have a consistent and centralized strategy, performance measurement, targets and IT system for the whole organization nationwide. Although the parental executive board had approved HOP’s strategy, it could be seen that the parental strategy would eventually overwrite that. Eventually, by the end of the research period, the earlier strategy had become a vision, the parental strategy was also affecting the annual targets of the case organization, and the matrix structure of the organization was shown.

On the other hand, the parental executive board had to get and use relevant data from every bank, so it was convenient for them to unify the operations. Since the case organization is the largest bank of the organization, it had had special treatment, and changes affecting this kind of position can, of course, cause resistance. Further, it had been quite common that the banks were given only basic guidelines for their strategy and target setting and they were able to impact them. However, as they anyway had to get approval from the parental executive board, the responsibility and power seemed fictitious. At the end of the research period, this individual power was taken away, the parental strategy and measurement template were given to the banks, and the banks were able to choose relevant measures based on their own emphases and characteristics (i.e. customer segments, region, customer acquisition) from the template. The main findings are summarized in the table 2 (p. 20).

Although the IT systems and digitalization had been discussed in the interviews throughout the period, the development had not proceeded as smoothly as it had been hoped. On the one hand, mobile apps and customer service robots have become a part of everyday life for customers and employees. On the other hand, the internal IT infrastructure is so large and thus difficult to control, and its development would be “insanely expensive” (Middle manager). Additionally, the MiFID II directive was such a massive challenge for the IT systems in most of the European banks that it also put all the other system developments on hold in HOP (Middle manager). Table 2 (p. 16) summarizes the main findings of the study according to the organizational levels and regarding the key change drivers.

Discussion and conclusions
In the HOP case organization, the bank level strategy process seemed to start with great enthusiasm, but its role was not sustained for the whole strategic timeline (2013–2025). In fact, the role of HOP’s strategy was altered to HOP mission, “leading bank in 2025 in the metropolitan region”, and the new (2016 onwards) group-level OP strategy, “Diversified services company”, began to have a higher impact on HOP’s operations. Nevertheless, the diversified services strategy was re-focused and clarified into “5 must-win-battles” by the new
<table>
<thead>
<tr>
<th>Strategy</th>
<th>Operative level</th>
<th>Middle management</th>
<th>HOP executive board</th>
<th>OP group executive board</th>
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<td>Well memorized at the beginning, but in the end, its meaning faded. Further, the way it was going to be achieved was not understood.</td>
<td>Well memorized, but the meaning had altered from strategy to mission. Connection with the PM confusing, causing middle managers to make personal calculations.</td>
<td>Well memorized, but the meaning was mission or vision from the very beginning. Management accounting was used during the process, and targets were consistent with the strategy.</td>
<td>In the beginning, they wanted to retain HOP’s own strategy, but in 2018, group strategy outstripped it.</td>
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| Performance measurement and management | Mistrust with the systems eased during the period. Using was routinized, but ‘multi-entry bookkeeping’ caused frustration. Need for e.g. additional Excels differed between business segments. | Operative level’s multi-entry bookkeeping seemed irrelevant, but targets were not entirely based on PMS. Later, targets were taken from group’s ready-made templates. | Used different data, so there were fewer problems. Cooperation with controllers was more intense than at lower levels. Some data were outdated, but they were truthful enough. | Group’s aim was to centralize performance management for the whole organization, and banks were given a ready-made template to choose relevant targets from. |

| Values             | Well memorized and internalized, even institutionalized. Most of the interviewees felt they were able to work based on organizational values. | Well memorized and internalized, even institutionalized. Most of the interviewees felt the strategy and targets were consistent with organizational values. | Well memorized and internalized, even institutionalized. Most of the interviewees felt the strategy and targets were consistent with organizational values. | Values were considered important and they were guiding the group’s operations. |

| Digitalization     | Digitalization did not affect PM, but it offered additional tools for customer service. | PM systems were considered partly outdated, and digitalization was not directly affecting middle managers’ tools for doing PM. | Management accounting systems’ interfaces were not cooperating perfectly. Digitalization did not seem to have an impact on performance management. | Digitalization was important, but the developments did not proceed smoothly, partly because of e.g. MiFID II regulation. |

Table 2. Main findings

group President in 2018. During this period, management accounting and accounting figures were considered important, but they were not combined with the strategy process at the operative or middle management level (cf. Sajasalo et al., 2016). Based on HOP’s CEO 1 and the HOP executive board’s decision, the communication of the strategy implementation focused more on organizational values and basic information instead of giving detailed information on strategic targets or how, e.g., the BSC was used to achieve the strategy, although at the executive level the connection between the strategy and annual targets was rather clear. Hence, there was no evidence to be found that the performance measures were strategic from the operative and middle management level perspective.

Further, local and parental executive boards considered annual targets to be connected with the strategy. However, as it was in Rogers’ (1990, as in Smith & Goddard, 2002) definition, the performance management should provide a link between the individuals and strategy, but in this case, the link could be found only at higher organizational levels. Despite the engagement of the lower levels by the CEO 1 visiting every bureau, this kind of strategic communication and lack of individual-level performance management caused confusion amongst the operative level and middle management and created the gap between them and the executive boards.

Additionally, the changes of the CEO and the President affected the way strategy and targets were implemented in the case bank. At the end of the research period, the strategic information was given only for middle management. Hence, there is evidence of how leaders’ personal style and way of thinking have power over others, although the power provided by the nominal position remains similar (cf. Giddens, 1984; Hardy, 1996). However, CEO 1 did not seem to be using his charisma to support strategic performance management, but his focus was on strategy and values.

Since the management accounting systems had changed right before the research period, the focus of this study was on their possible institutionalization. In the beginning, there were several issues, including outdated and irrelevant reports and multi-entry bookkeeping, causing distrust in systems. Despite the distrust, the users were given no option, so the use of the systems was routinized, although not every segment was able to give up the multi-entry bookkeeping. Additionally, the amount of different and partly overlapping systems (e.g. Excel, PM, and CRM), and regulations (e.g. MiFID II) were affecting how OP as a group was able to answer the evolving digitalization. For instance, according to a few interviewees, the MiFID II was putting all the other system developments on hold, and on the other hand, the current systems were partly outdated and so complex that the costs of their comprehensive development will be quite massive. Further, these change drivers also affected how well or poorly every organizational level was able to use and exploit the existing systems.

The digital developments, including mobile apps, customer service robots, and internal communication channels, seemed more like symbolic extra layers than actual developments or help for the management or institutionalization of any new management accounting system. Kinnunen’s (2018) cross-sectional case study indicated that the higher organizational lev-
els were further in the institutionalization process proceeding towards the institutional realm. However, in this longitudinal study, the external and internal change drivers can take effect in a very short period of time, causing previous change attempts to loop in the realm of action, often leading to status quo and preventing more thorough institutionalization.

Although it seemed that the use of the MA systems was rather routinized, the changes in internal (e.g. strategy, CEOs and the President) and external levels (e.g. the economic and political level, including EU regulations) seemed to happen rather rapidly, causing some of these internal changes to be looping in the realm of action, i.e. initial first steps or attempts to change actually remained as attempts and no other acts were taken in order to support them. Additionally, the organization was not making clear decisions about when to end previous changes, and those initial first steps were staying in the background at the same time as new changes or change attempts were implemented. In Burns and Scapens’ (2000) framework, the same management accounting change could proceed between the processes of enacting and reproduction, oftentimes before institutionalizing. Also in this paper, there seemed to be several partly simultaneous change attempts, of which some seemed, however, to proceed towards new rules and routines, whereas some were, in fact, left aside, appearing only as momentary attempts to change, i.e. looping in the realm of action (thereby contributing to Burns & Scapens, 2000).

As the digitalization has become a very comprehensive phenomenon in the last decade, its significance to organizational and management accounting changes, as well as to the societal level, should be taken into account in studies. In the banking industry, robotics, mobile apps and other technological innovations have affected markets and competition, and consumers are also demanding new kinds of services nowadays. At the same time, rapidly developing technologies, including contactless payment features or even cryptocurrency, have caused pressure towards legislators and regulators as well (e.g. PSD2, European Commission, 2019b). The laws and regulations concerning digital and technological issues, on the other hand, are affecting, either directly or indirectly, organizations and their competitors. Thus, when studying internal changes in organizations, the digital level should also be acknowledged and considered as one additional level affecting all the political, economic, field and organizational levels introduced by Dillard et al. (2004).

Organizational values, however, were internalized or even institutionalized during the research period, and most of the interviewees were able to work according to these values. Similar to Teittinen et al.’s (2018) findings, the values were easily combined with management accounting and performance management. Additionally, the values were said to be taken into account during the strategy process and when planning the strategic targets. Nevertheless, strategy and management accounting’s connection with the values and organizational culture did not help them to institutionalize, but they stayed decoupled (cf. Järvenpää, 2009). Further, the power of the existing institutions (e.g. organizational ideology, cf. MacIntosh & Quatrone, 2010) was so strong that it took only a couple of years to step back from the new and more wide-ranging strategy and focus on basic banking.

As can be seen, the process of MA and PM institutionalization in banking and the cooperative context is very complex, and there are several internal and external change drivers affecting it both directly and indirectly. Cooperative banking, its special characteristics (e.g. complex organizational structure) and organizational values in the changing world thus provide several possibilities for both further longitudinal and cross-sectional studies.

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References


Making Sense or Betting on the Future? Identifying Antenarratives of AI projects in a Large Financial Organization

Dinesh Poudel

Abstract
The future is uncertain, but what is certain is that we can make sense of the future through our ‘antenarratives’. In this study, I shed light on prospective sensemaking and apply the concept of antenarrative as a framework to identify how strategy practitioners make sense of AI projects. The empirical case organization is a large Finnish financial organization that aims to be a digital leader. The case organization is currently developing and implementing AI in its business operations, a recent and emerging wave in the financial business sector. Following a thematic analysis, the narratives that seem to either reflect positive (that promote) or negative (that impede) changes were examined. The results are twofold: practitioners ‘normalize change’ and ‘make meaning’ as positive prospective sensemaking, while as negative prospective sensemaking practitioners reflected on their ‘capability challenges’ and ‘dilemmas’.

Keywords: strategy-as-practice, sensemaking, antenarratives, strategy work, change management, digitalization, artificial intelligence

Introduction
Imagine you are milling about in a large casino with the top figures of high tech… Over at one table, a game called Multimedia is starting. Over at another is a game called Web Services. There are many such tables. You sit at one. “How much to play?” you ask. “Three billion,” the croupier replies. “Who’ll be playing?” you ask. “We won’t know until they show up,” he replies. “What are the rules?” “These will emerge as the game unfolds,” says the croupier. “What are the odds of winning?” you wonder. “We can’t say,” responds the house. “Do you still want to play?” It was Brian Arthur (1996) who used the afore-quoted gambling casino analogy to illustrate the kind of increasing uncertainty we face that demands a need for sensemaking in an organization. Uncertainty, to begin with, is an ambiguity about the consequences of various actions, given that the situation is unpredictable, and information is unavailable and inconsistent (Brashers 2001).

Going beyond the mere analogy, arguably, the gambling casino analogy is seemingly relevant to comprehend the landscape of emerging technology, such as Artificial Intelligence (AI), that obscures the future and naturally influences organizational strategy work1. AI has shifted the race of digitalization to the next level and put forth uncertain trends where digital maturity is in question. More than just a casino analogy, the question that begs an answer is: are participants still playing in the unprecedented uncertainty? If so, in this context, how are strategy works managed by participants (‘practitioners’ from now onward) and make sense of it in practice? (Laine & Vaara 2015). Practitioners’ sensemaking comes into play, enabling them to act when the world as they knew it seems to have shifted (Weick, Sutcliffe & Obstfeld 2005). In organizational context, scholars define this shift as a ‘change’ in that it is a departure from the status quo (Huber & Glick 1993), and there is a difference in form, quality, or state over time (Van de Ven & Poole 1995). Thus, strategic change cannot be analyzed without practitioners’ interpretation of the past, present and future, i.e. temporal work (Kaplan & Orlikowski 2012). In this idea, exponentially changing technology such as AI offers us the possibility of learning about how practitioners interpret and project the upcoming future that ultimately shapes strategy work. Therefore, considering the aforementioned opportunity, this study contributes to our understanding of practitioners’ future-based sensemaking of AI-led change that affects strategy work.

The change in organization that links to technological advancement is multifaceted (Cáscio & Montealegre 2016), and one commonly acknowledged is the trend of digitalization. As a trend, digitalization is growing more than ever, and incumbent organizations are using the aces up their sleeve to become digitally mature and stay abreast of the change. Amongst others, notably, one of the affected is the banking industry (Japparova & Rupeika-Apoga 2017). The need for digital transformation emerges from customers’ expectations shifting (Schmidt et al. 2017), millennials coveting digital services (KPMG 2017; Nava et al. 2014), the high propensity of people switching banks, and the competitive threat from financial technology start-ups (CGI 2015). Amidst the race to digitalization, the area of AI seems to be the latest interest and the ‘Next Big Wave’ (Finextra 2017). The banking industry is projected to benefit the most by using AI, saving
more than one trillion dollars by 2030 (Maskey 2018). AI-enabled tools such as chatbots, virtual financial assistants, automated credit scoring, real-time fraud detection, etc., have already been used by banks. According to FSB (2017) some of the uses in financial systems are: customer-focused uses (or front-office) such as credit scoring, insurance, and client-facing chatbots; operation-focused uses (or back-office) such as capital optimization, model risk management, and market impact analysis; trading and portfolio management in the financial market, and for regulatory compliance (‘RegTech’ and ‘SupTech’). In the age of the fourth industrial revolution where data is the significant asset, the financial industry is spearheading the application of AI to gain competitive edge. Over and above, many AI projects are underway and technology-led changes have been drastic over the past few years (Pwc 2016).

In some as change naturally drives practitioners’ concern to manage it, one fundamental challenge for practitioners is to manage the strategy work with future uncertainties (Kaplan & Orlikowski 2012). It is less about technology and more to do with managing its transformative strategies (Kane et al. 2015). As much as technology enhances competitiveness, it poses daunting managerial challenges and the journey is likely to be perilous (Yoo et al. 2012). A particular blind spot seems to be the failure to recognize employees and their managers’ perspective (Mckinsey 2017), and a lack of a foundational understanding of AI among managers (Fountaine et al. 2019). The notion of strategy as ‘emergent’ (Mintzberg & Waters 1985), i.e. something that evolves over time, calls for understanding the interpretations of the emerging future, but not merely betting on the future under illusions that can cause costly errors (Liu & De Rond 2015).

In the case of AI-led changes, management concerns are not exclusively with continuous change (Burnes 2004) but most importantly with disruptive change (Bower & Christensen 1995). Strategic changes that are disruptive in nature can negatively influence performance (in Kunisch 2017; Zajac et al. 2000). However, for better or worse, AI-based projects are advancing significantly fast, and under this advancement, understanding the management perspective is equally important in order to make sense of the future it entails.

**AI-led change, prospective future, and sensemaking**

While massive growth in AI investment by organizations continues to appear, it has created a formidable prospective future. As discussed in World Economic Forum’s annual meeting in the past few years, AI has been a critical aspect of the fourth industrial revolution. Their report on “The Future of AI in Financial Services” states that the financial industry seems to have made large-scale investments across a broad spectrum. The conservative investors invest to improve existing processes, while radical believers are making bold bets on the future. The investment in AI by financial institutions is expected to be approximately ten billion dollars by 2020, and C-level executives’ agreement on AI adoption to maintain a competitive foothold has been quite common. However, it seems that there is an acute need for us to understand the strategic implication of AI as it is altering the attributes of financial business. Furthermore, it is creating a new battlefield of customer loyalty and growth in partnerships. Given the level of uncertainty, it is only time that will reveal what is going to unfold in the future. One important take-away from the report on “The Future of AI in Financial Services” is that regardless of the benefits AI offers, financial institutions need to make significant changes within their organizations. Naturally, understanding the managerial interpretation of this change becomes important as the change is rarely static and requires continual adjustment while presenting unending challenges (Isabella 1990).

**Organizational change is an interpretive process (Barr 1998) and practitioners act according to their own interpretations of their world (Weick 1979) to influence their strategy work (Laine & Vaara 2013).** Within technological change, understanding practitioners’ interpretation is imperative. For example, a study by Orlikowski & Gash (1994) reveals that AI as a technology, when introduced in an organization, makes individuals frame their technological understanding differently. Even so, the differences in frames of understanding both facilitate (Gioia 1986) and constrain (Bolman & Deal 1991) the strategy work. However, in turn, incongruence in understanding produces difficulties and unanticipated outcomes. For example, “the problem is that AI is a black box—people don’t feel comfortable when they don’t understand how the decision was made” (Stephen Brost in Marr 2017). If this holds in practice, how can one manage and make sense of the black-box nature of AI projects? An AI project being a strategic change initiative, it naturally influences strategy work, where our attention should be on what actually takes place in the process (e.g. decisions made by AI) (see Golsorkhi et al. 2010). At this point, if the black-box nature of AI remains inconceivable to us, the best we can do is to attempt to make sense of the uncertain future by narrating how to go about it in practice. After all, organizational members make sense of change through their narratives (Vaara & Tienari 2011; Grant & Marshak 2011).

Going back to the casino analogy, as part of digital change, playing in the digital space successfully requires collective sensemaking and co-constructing meaning (Thomas et al. 2011). If not, it is merely making a future bet. Because, inherently, in their common pursuit, practitioners socially construct meanings to form a whole (an organization). Even at its basic level, sensemaking originates from the individual level (Dervin 1983; Klein et al. 2006a, b). However, eventually, it must be narrated to a collective level (Weick 1995). Following this notion, it is crucial that everyone understands the rules and manages prospective uncertainties when complete information is in question. In this process, the subjective sensemaking is expected to take place on an individual level, and/or between individuals where intersubjective meaning is constructed (Maitlis & Christianson 2014). Whatever is the case, this subjective sensemaking forms fragmented stories within an organization. For Boje (2001), these fragmented stories are incoherent narratives that take the form of antenarratives. In his work, Boje attributes organizational members’ antenarratives as bets on the future, and it manifests organizational facts. Perhaps it is fair to say that betting on the future requires organizational members’ sensemaking so that they can play in their world stage. After all, in Shakespeare’s eloquent words, “all the world’s a stage. And the men and women merely players” (Shakespeare & Furness 1963).

**Research aim and contribution**

In this light, this paper emphasizes that instead of waiting for events to unfold without knowing what lies ahead and retrospectively making sense of it with a traditional narrative approach (Weick 1995)—because heavily relying on the past incapacitates from seeing the future (Tsoukas & Shepard 2004)—we should rather, also, delve and extend Boje’s notion of future-based sensemaking (i.e. prospective sensemaking) through antenarratives. By doing so, we are able to break out of...
the narrative prison while collecting antenarratives, and create a story of the future (Cai-Hillon et al. 2011), and better understand the polyphony (i.e. multiple voices) of strategy work that influences the future directions of an organization (Laine & Vaara 2015).

To explore this, I adopted Boje’s concept of ‘antenarrative’ (Boje 2011). For Boje (2011), the antenarrative offers a possibility to look into emerging stories and their meanings that help us understand the prospective future. The antenarrative approach is important to adopt in this study because the case organization is going through strategic change by adopting AI-based solutions, and this as an organizational change rarely follows coherent stories (Vaara & Tienari 2011). This case is important in two ways: first, following Gioia et al. (1994: 364), this change is a strategic change endeavor in that the case organization has re-defined its organizational mission and purpose, where a substantial shift in goals is seen. Second, the level of uncertainty in this change is immense in that the case organization is implementing AI-based solutions and the increasing investment in AI-based digitalization is apparent. Suitably, it opens up an avenue to explore the prospective sensemaking of the project, where sensemaking of change is important for practitioners (Weber & Manning 2001; Weick 1995). From a strategy practice viewpoint, the change becomes meaningful only when organizational members make sense of it through their discourse (Laine & Vaara 2011; Grant & Marshak 2011). Taking the narrative view, strategic change is a form of future-oriented speculation, and antenarrative is a form of discourse that represents the sensemaking in prospective (Auvinen et al. 2018).

To date, most of the studies are based on the idea of sensemaking as inherently retrospective (Weick 1995), while others argue that sensemaking can also orient toward the future (Gephart et al. 2010). Despite concerns over the nature of sensemaking being either retrospective or prospective, or even interplay between them, we know little about how to capture the future and make sense of it. For example, Auvinen et al. (2018) shed light on this issue of managing strategic organizational change that is both complex and a future-oriented phenomenon. Their study is in line with others (Gioia & Chittipeddi 1991; Boje 2008; Sajasalo et al. 2016) and urges the need to explore prospective sensemaking through new approaches, so that we can come to understand the flux of meanings in organizational change. Auvinen et al. (2018) reveal that emerging meanings (i.e. antenarratives) resonate positively or negatively with the future. Pursuant to their findings, this study intends to look over antenarratives that reflect both the positive and negative sides of AI-led projects.

Henceforth, in this particular study, I use the concept of antenarrative to construct themes of strategy practitioners’ prospective sensemaking of AI in the case organization. By doing so, the study will identify how sensemaking is manifested in this particular strategic change endeavor.

Theoretical Framework

The literature on organizational sensemaking has become fragmented in that it offers wide varieties of distinction. One key question rests on the ontological differences of whether sensemaking takes place on an individual or collective level. While the other question rests on whether sensemaking is a retrospective or prospective activity (Maitlis & Christianson 2014). Unlike the classic concept of sensemaking that rests on the storytelling approach of an Aristotelian view with a linear structure, i.e. a BME framework (Figure 1), literature in sensemaking, predominantly, follows the notion that people make sense of an event when it happens. One key contribution to this idea comes from Weick’s pioneer work (1995). However, recently, scholars have taken time and temporality more seriously (Kaplan & Orlikowski 2013; Kunisch et al. 2017; Orlikowski & Yates 2002). In sensemaking literature, time and temporality are important. Following this, on a basic level, Dawson & Sykes (2019), reflect on two contrasting perspectives of storytelling from Gabriel (2000) and Boje (2008). These perspectives are different in their approach to stories in that Gabriel examines complete coherent stories with sequenced time (BME), that still exist in linear form, while Boje examines incoherent and fragmented stories (antenarratives) that move beyond the linear form of a narrative, where non-linear stories are addressed. Dawson & Sykes (2019: 109) argue that the contrasting views have resulted in dualism in the literature. This dualism, however, enables us to analytically differentiate one perspective from the other, while it also limits our research agenda on understanding sensemaking in terms of time and temporality. Their study further suggests that future research should address multiple concepts of time and temporality. Non-linear stories that promote a particular version of reality may be misrepresented by stories with a BME framework. Given that, in an uncertain context, we are unable to predict the future, i.e. the end (Figure 2), and in line with time and temporality, this paper adopts Boje’s concept of antenarratives to understand the prospective future that is unknown in the case context.

In this light, the forthcoming section presents the concept of prospective sensemaking, followed by Boje’s antenarrative, that forms the basis of this study in the case organization.

Prospective Sensemaking and Antenarrative

Although a major part of studies on sensemaking rely on Weick’s (1995) ‘retrospective’ nature of sensemaking, there has been an increasing interest in ‘prospective’ sensemaking (Maitlis & Christianson 2014). Prospective sensemaking is “the conscious and intentional consideration of the probable future impact of certain actions, and especially non-actions, on the meaning construction processes of themselves and others” (Gioia et al. 1994: 378). Primarily, individual attention is directed at events that may occur in the future (Rosness et al. 2016: 55) “by imagining some desirable (albeit ill-defined) state” (Gioia & Mehr 1996: 1229). Despite prospective sensemaking that underpins significant organizational processes, such as strategy making (Gioia et al. 1994; Gioia & Thomas 1996), this research area is still under-researched and under-theorized (Stigliani & Ravasi 2012).

The pursuit to explore prospective sensemaking is specifically
important in a high technological context where information of new technology is by definition incomplete (Friesl et al. 2018). Following this notion, this study centers on the AI landscape as AI-triggered prospective sensemaking is arguably important for us to comprehend, because there is no unified definition of what it is, how to use it, and what is yet to unfold. This inconsistency offers ambiguity and affects AI discourse. Consequently, it raises the strategic question of how it should be managed and made sense of. Following the strategic direction of an organization that is in the AI ecosystem becomes challenging. Hence, prospective sensemaking is essential.

In a large financial organization that has the strategic goal of becoming a digital leader and foresee the AI potential, our understanding must rest deeper on how organizational members make prospective sense of the technology that offers such a hazy landscape. From a strategic point of view, how managers prospectively make sense of poorly understood events that are still unfolding is an important research interest in strategy practice, and process study (Stigliani & Ravasi 2012; Weick et al. 2005). After all, strategy is fictional (Bubna-Litic 1995) and future-oriented (Cai-Hillon et al. 2011), and “where prospective sensemaking is aimed at creating meaningful opportunities in the future” (Gioia & Mehera 1996: 1229). This forward-looking sensemaking can be understood by utilizing the concept of antenarrative (Boje 2001). We should remain cognizant that antenarrative and prospective sensemaking are not stand-alone concepts, but rather they are two sides of the same coin. Here, antenarrative is a form of prospective sensemaking. Therefore, antenarrative in this paper implies one way of prospective sensemaking.

Constructed narrowly, antenarrative as a concept pioneered by Boje (2001a) defines it as a bet on the future where some anticipated events unfold. Antenarrative is prospective sensemaking in contrast to the Aristotelian (350 BCE) view of narrative, that is retrospective by definition. Antenarrative is the fragmented, non-linear, incoherent, collective, unploted, and pre-narrative speculation, a bet (Boje 2001: 1; Boje 2011).

Boje (2011: 7–15) distinguishes the nature of antenarrative as three types: linear, cycles, and rhizomes. The significant distinction between these three is the orientation of linearity and non-linearity. In linear orientation, antenarrative is flatland storytelling where linear BME plot structure is the case and no surprises are expected. While in cyclic antenarrative, the assumption is that the past will repeat itself (see Boje 2011: 391). A simple example he describes is of goal setting in planning the future. The goal setting is expected to have a linear sequence that has point A as an initiatory event and it is followed by B, C, D, and so on. In this light, we expect the past to repeat exactly as before as a type of ‘future perfect sensemaking’. Although it guides the strategic planning side of the sensemaking, however, in terms of a strategic implementation phase, it is still questionable if viewed from the standpoint of strategy as an emergent process (Mintzberg & Waters 1985). At least given that broad uncertainty in terms of developing technology such as AI, this may not make as much sense as a whole—“it helps, but only a little with predicting the future”. While Boje’s non-linearly oriented antenarrative is ‘spiral’ and ‘rhizomatic’ (Boje 2011: 10–11). Boje introduces spiral antenarrative as a vortex spiral model. Once the antenarrative takes the vortex form, the future emerges randomly from past and present. This is due to countless and unknown possibilities. However, eventually spiral antenarratives become part of the rhizomatic form that does not behave as a stable line or cycles—instead, it evolves in all directions until it meets an obstacle (e.g. change). Rhizomes are non-linear in the sense that they are bonded by missing information, the information you do not have. Therefore, a rhizome antenarrative tries to make sense of a future where organizations do not have comprehensive information. A rhizome grows in all directions until it meets an obstacle, when it changes its direction to one that is unknown. Similarly to how technological disruption breaks forth through the market trends. Consequently, organizations must use their antenarrative skills to make sense of the events that are to unfold. Antenarrative sensemaking ‘bets’ on the future are a strategic necessity because the future is already arriving, instead of seeking retrospective narrative of strategic backward causation (Bilow & Boje 2015).

On this foreground, the remaining part of the paper utilizes the concept of antenarrative in exploring how practitioners create stories about the future of AI in their organization.

The Case Context: OP Financial Group, Digitalization, and AI

The empirical analysis is based on a case study of Finland’s largest cooperative bank—OP Financial Group. OP Financial Group is formed of 156 independent OP cooperative banks and OP Cooperative, which they own, including its subsidiaries and closely related companies. Some 1.9 million owner-customers own the OP cooperative banks and thereby the entire OP Financial Group. The group employs a staff of roughly 12,000. Their vision is to be the leading and most attractive financial services provider in Finland—from the perspective of customers, employees, and partners. It is ranked as the most trusted financial service provider by T-media, and the best corporate bank in 2018 by Prospera, and it has been recognized as a digital leader in Finland (OP Report 2018).

OP Group has changed their vision of becoming ‘the best bank’ to becoming ‘a leader in financial industry’. Today, digitalization is one of the main focus points of the group. OP’s recent strategy reveals that it aims to position the company at the forefront of digitalization: “We are making heavy investments in the development of digital banking services” (Annual report OP year 2018). AI-based projects are the next big global trend and OP is in the AI-led digital game. Due to the changing operative environment where technological development is one of the megatrends, OP Group’s current facial recognition payment project is one of the many pilot projects being undertaken in the organization. While another project being implemented by OP is a digital home loan service that automatically processes applications by making quick decisions. OP also launched an artificial intelligence training program so that the ethical principles of adopting AI are followed. Other projects include blockchain-based solutions and some further AI-based projects that are underway. Arguably, the score of future uncertainty is high in the case organization due to the rapid adoption of AI-based projects and the pursuit of becoming a leader in the financial industry while keeping digitalization at the fore.

Methodology

To construct a coherent story of the case, to keep the contextual richness, and to avoid complexity by focusing on a particular context (Dyer & Wilkins 1991), qualitative embedded single case study design is followed (Yin 1994), and the study is thematic in nature. Braun & Clarke’s (2006) six phases of thematic analysis were used as a framework: transcribing data, generating initial codes, searching for themes, reviewing themes, defining themes, and producing the report. To generate the initial cod-
As interviewees are OP’s managers at different levels and wider units, this may, perhaps, reflect an idiosyncratic perspective. However, every unit follows standard strategy. Hence, strategy practices are congruent. The interviewee included participants from the top management (coded TM), Upper Management (coded UM), and operatives (OP). The responsibilities of participants included the area of digitalization, AI projects, business controller, and strategy (see Appendix 1). The interviews were kept to the questions that principally followed the topics of AI, digitalization, and strategy, and at least two interviewees were involved per interview. The interviews were semi-structured and interviewees were given the possibility to describe their prospective sensemaking as freely as possible. Nevertheless, interview questions were directed toward key themes such as: what does AI mean as a phenomenon, and the role of AI in their work in the future and in the industry. The questions were supplemented with the sub-questions so the direction of the main question is central.

The analysis focused primarily on identifying the antenarratives characterized in sensemaking in the case organization. The main research question utilized in the analysis is: What antenarratives do strategy practitioners use to make sense of AI? Following the data, the analysis then focused on two main antenarrative themes: 1) the positive antenarrative, that promotes strategy practices, and 2) the negative antenarrative, that impedes strategy practices.

### Positive Antenarrative

**Normalized change—as positive antenarrative**

In line with OP Group’s strategy, the group seems to ambitiously promote change of any kind to keep up with the pace of change inside or around the organization. It is pronounced through the narrative in their strategy documents (OP 2018):

“In today’s changing world, companies need to react fast—the strategy must be kept up to date at all times”.

“We will reinvent ourselves for the benefit of customers…”

During the interviews, as much as we discussed the future of AI as a technology that holds a blurred outlook for OP and others in the industry, where ambiguity and uncertainty is self-evident, this type of change initiative by its nature invites resistance, where practitioners are mostly reluctant. However, in OP’s case, readiness to change appeared more than resistance to change as reflected by one of the business controllers and operative level managers:

“The amount of cash is diminishing, people don’t use online banking, they use mobile banking, they have these friends pay, they have Mobilepay and Pivo and know what if we are not involved with them then we are not as successful as their customers and we are not responsible if we are unable to offer the customer what it wants or even it does opportunity for them, you will not compete with competitive products at competitive prices, so I think it works well, the world is changing its bridges” (UM1).

“Before our vision was to be the ‘best bank’, today the vision has changed to be ‘the leader in financial industry’...we discuss about the change quite frequently in our meetings; changing nature of our world, changing customer preferences and all the changes. We should... that we manage the best or we are with the pace of change after 5 years or 10 years later. It is a continuous discussion really...” (UM2)

“I believe that, the world is changing, attitude is changing..."
and bank should change in that direction too” (OP1).

When change is introduced in an organization, two types of major responses are prevalent: resistance and/or readiness to support the change (Armenakis et al. 1993; Jones et al. 2005). In OP’s case, it was evident from the interviews that practitioners at OP use the antenarrative of ‘response to change’ as plausibility of their sensemaking. Response to change as antenarrative, in this context, means that most of the practitioners at OP seem to have positive connotations to AI-associated change. The reason being that, for them, adopting AI projects is a response to an ever-changing business landscape. At this point, practitioners seem to overlook the uncertainties that entail high risk and instead consider AI projects plausible in order to stay competitive.

There is a difference between resistance and readiness (Self 2007). The readiness to change is by definition ‘organizational members’ beliefs, attitudes, and intentions regarding the extent to which changes are needed and the organization’s capacity to successfully make those changes’ (Armenakis et al. 1993: 681). In OP’s case, practitioners’ readiness to adopt AI overshadows the resistance towards it. One key antenarrative that stands out is that “change is constant and we must follow the trend in future”. To analyze this particular mindset from Boje’s (2011) antenarratives type, it in fact explains that practitioners hold linear-oriented antenarratives.

As well as linear sensemaking, the analysis also identified parts of cyclic-oriented antenarratives (Boje 2011) in what the head of OP lab commented, “we change, we adopt, we improve, and we change”. The following excerpts spell out cyclic antenarratives:

“Facial recognition payments are expected to be the next big global trend in payments. Customers have been very pleased with facial recognition payment in international pilots. The technology used in facial recognition payment can be used in other applications too. For example in China, the technology is used to identify customer loyalty benefits and in access control. We can also see broader opportunities for application. As the technology is new, it is important to collect feedback on any fears and apprehensions users may have. Based on what we learn, we will then be able to take the right next steps in development” (UM3).

“The work has changed so much… work task has changed so much. Maybe it is that I started as a banker in 90s, I remember there was a panic and black clouds about the work we are doing will end in coming days when we no longer need the cash transactions but we are still here. This reflects the fact that, even if there no longer is the case transactions but something else will come in that place and we are ready for that” (UM4).

“I have been here for 20 years now and it is great to see changes. The finance side and the finance industry are developing all the time, for me, it’s nice to be working in a job that has been in place and everything is going to be as before, but I like the whole thing changing and the people involved. I am very pleased with my employer and group. Proud that I’m working here” (UM2).

The preceding mindset of cyclic-oriented antenarrative is engaged in reductive and confirmatory biases (Boje 2009). In any case, apparently, responding to the change is the name of the game, where participatory culture is the business trend at OP. The notion that the market is changing (it will change and we also need to change), customer behaviors are changing (and we also need to change), and we need to change (as everything is changing) seems to be their sensemaking. It was interesting to see that there was no significant deliberate resistance to AI-led changes in their antenarrative, where uncertainties posed by AI were seen as threats. Perhaps it can be explained by the notion that “the change is new normal” (Jørgensen et al. 2008) where companies are challenged to both respond and anticipate the change to stay in the industry (Buono & Kerber 2009). When change is the new normal, change becomes continuous and thus one must participate. Hence, it can be summed up in the following way: practitioners at OP normalized the change and the plausibility of their prospective sensemaking was supported by change being constant and necessary.

Anticipated benefits—as positive antenarrative
The other antenarrative theme outlined from the data revolves around the benefits of AI anticipated by OP’s managers. “Anticipated benefits’ as plausibility (in the positive sense) of sense-making was salient in the interview data. Since practitioners’ negative anticipations of AI were scant, much of the emphasis was placed on the potential benefits of AI in the future. Their antenarratives were legitimized by the value proposition of AIs rather than that of its risks. The strategic head of OP provides a rationale for AI-embedded benefits:

“We are right now in the elementary stage in the way, but good enough from the point of view of customer experience, that the services are pleasant. I absolutely believe that, in a speech interface, it is not the same as human care. But somehow so, it is just an easy framework for people to think everyone has assistant when they need as a service. You want to pay the bill, you ask your AI assistant… I get the television switched on through AI, I get the television channel changed…” (TM1).

Adhering to their line of sensemaking, the anticipated benefits as antenarrative closely follows Vroom’s (1964) notion of valence. The valence refers to the attractiveness of the outcome of the change. It has been widely recognized that positive expectations regarding anticipated outcomes influence the practitioners’ support in the change process (Bartunek et al. 2006). If so, this can also be linked to the concept of ‘meaning-making’ in change projects. Insomuch as practitioners mostly sought meanings in AI projects, and yet again overlooked the uncertainties that entail future risks.

Here, meaning-making is different from sensemaking in that it is a value-based reflection. In meaning-making as a process, practitioners make their personal meaning using conscious, value-based reflection in the context of ambiguous situations and dynamic environment (Van den Heuvel et al. 2009). One of the senior sales managers reflected on a meaning-making antenarrative where anticipated benefits echoed:

“Well it’s pretty impressive. It has good things, or quite a lot of good things, that many things can be done in a much more straightforward way… well, it looks good. Good things have been done, and certainly as long as certain things can be done better… you don’t know what that future will bring, But I would see that the OP Bank Group has a good future on this” (MM1).

Perhaps the meaning-making in this context originates from the highly stressful event assigning meaning to the outcome to avoid discrepancy (Park 2010). Hence, it can be summed up in
the following way: practitioners at OP sought benefits of the change and the plausibility of their prospective sensemaking was supported through meaning-making.

As discussed earlier, practitioners summed up their AI-based prospective sensemaking in a positive way. Their antenarratives on OP’s AI-led future reflects the compelling value proposition in both ‘normalized change’ initiatives and ‘anticipated benefits’.

Negative Antenarrative

Competitive force—as negative antenarrative

At a broader level, indicated in their newly revised strategy documents, OP Group foresees itself holding the ‘leading position’ in terms of digitalization. As competitive as it sounds, OP’s older strategic vision was to be ‘the best in the industry’. The focus on competition in their narrative is self-evident. At OP, implementing the vision into practice could be explained by their antenarrative and the way they see the future. As much as it sounds like a positive narrative to out-perform competitors, their antenarratives in practice have something more to explain, conspicuously in the negative sense.

Practitioners at OP see that AI leverages their competitive advantage. On the positive side, yes, competitiveness defines the winners and losers (Porter 1980). However, on the negative side, strategic success is not driven just by being determined to compete, but also by the strategic capabilities an organization has (Pandza & Thorpe 2009). It appears that practitioners’ antenarratives at OP revolved around the speed of competition being a topic of concern. Particularly with the speed and frequency of change (i.e. pace of change) that ultimately seems to have challenged their capabilities. As narrated in OP media (2018):

“Some years ago, the technology goal of banks was often ‘mobile first’, but now the strategy is transforming into ‘artificial intelligence first’.”

“OP marks yet another change in 2019 mainly based in digitalization and AI based projects... Let us continue our journey of change together in 2019.”

The afore-quoted excerpts reflect on technological changes being frequent, yet practitioners normalize them (as discussed earlier) with their optimism. However, there are certain questions behind their rationale to normalize the change that are still doubtful. The questions revolve around the pace of change and the plausibility of their prospective sensemaking. Practitioners indicated doubts on their organizational efficacy. For them, the competition may have pushed OP to invest a little too far in the future. Their antenarratives hint at competitive force as a determining factor. The speedy change represents the competitive force that practitioners should embrace. However, in addition, managing capabilities needs extra attention.

Contradiction—as negative antenarrative

Throughout the analysis, also, contradictory elements emerged in their antenarratives. Practitioners reflected on the AI-led change project as a positive initiative, but were simultaneously unsure to trust the change, which is clearly a contradicting view of negative note. This inconsistency and its contradictory logic creates organizational challenges (March 1991). From forthcoming analysis it follows that, in OP’s case, some sets of contradictory logic regarding AI-led changes were noted. From their antenarratives, the head of strategy indicates the prospective logic and counter-logic on the AI:

“Well, I think the time of AI is all the time, I don’t think it will ever end. But it is true, we overestimated in the short term and underestimated in the long term... it is now a days part of our everyday life so AI is way to go. It supports in decision making, it sure help us in leadership... it’s probably so scary that the robot can teach robot but the motive behind that is unknov-
"Well, according to most of the research, yes really, yes if you think about manual task then robots make less errors than human... I trust the robot doing our jobs... But then I also don’t believe that there will be a time when we don’t need human beings to do our job completely. That, this is a big thing. This is bringing much opportunities but also not a big difference in some other way" (UM5).

As examples, the aforementioned excerpts can perhaps be viewed through Weick’s notion of organization as an outcome of an interactive sensemaking process, inherently defining contradiction in sensemaking processes. As he says: “ambivalence is the optimal compromise” (Weick 1979: 219; see also Langenber & Wesseling 2016). Contradiction refers to expressing opposite views that is used as a rhetoric to create tension in a story. For instance, paradox, irony, oxymoron, and dilemma are commonly used (Robey 1995). It appears that this case rather represents the nature of a dilemma, because practitioners expressed incompatible evaluations of frames within themselves (Engeström & Sannino 2011). In any case, it associates with the nature of business today, rapid and non-linear where effects are not proportional to their causes (Sherman & Schultz 1998). For that, practitioners are unable to narrate the consistent views of the change initiative where a general linear relationship between input and output can be defined.

While in interviews, when contradicting antenarratives emerged, practitioners concurrently realized the risks involved in supporting their optimistic rationale regarding the change project. It can be seen in the following excerpts from remarks by a senior business controller, an operative level manager, and OP media 2018:

“There is a huge risk; I think we have not identified everything at this moment. That is why we cannot prepare ourselves for this technology. It is quite big. We might lose all our customers at once, everything is possible in this. In that way it comes with big risk” (UM2).

“AI is super really useful that it helps automate our work saving time but not always. AI makes it easier… but I think they are looking for human contact than a robot. It is different when a person from bank calls and ask customer, what a loan application is about. Much better than robot making mistakes… in many cases it does” (OP2).

“AI is changing the finance industry—human labour may not vanish, it will change… Researchers who are familiar with how AI works and what its limitations are, talk about it very differently from what is common in public discussion” (OP media 2018).

As remarked above, regardless of practitioners’ explicit focus on the benefits of AI, the implicitly envisaged risk appears to be true in their antenarratives, which clearly contradicts their views. As such, the practitioners’ contradicting views are associated with discontinuous information on the concept of sensemaking (Weick 1995), and they take on the form of cyclic antenarratives in that practitioners presented counterfactual arguments that contradicted their prospective sensemaking. As a result, contradicting views revolve around conflicts that diminish organizational effectiveness and contribute to “vicious cycles” (Hargave & Van de Ven 2017: 328).

Concluding the findings, figure 4 illustrates the antenarratives that practitioners at OP utilize in their prospective sensemaking of AI projects. Four major antenarrative themes were identified during the interviews, representing both positive and negative framing.

**Discussion and Conclusion**

This paper started by questioning if one would participate in uncertain and ambiguous events that are yet to unfold (i.e. future-oriented). A case of AI in the financial industry was explored, given that it holds the nature of uncertainty. But what was more important was to uncover the sensemaking of the future-based project that revolves around uncertainties. Given that understanding sensemaking is a narrative process (Bruner 1990; Weick 1995), while prospective sensemaking is an antenarrative (Boje 2011). From the case analysis, it appeared that practitioners assuredly supported the AI project and predominantly adopted an optimistic position. Although as optimistic as practitioners seem at OP, contradicting logics in sensemaking were apparent in their antenarratives. The findings contribute to the growing debate on sensemaking (particularly echoing Boje’s notion of prospective sensemaking) in an organization by providing insights toward the following conclusion, and provokes the following questions listed for further study:

Firstly, I would like to follow the discussion of practitioners…

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Figure 4. Positive & negative antenarratives in OP

http://ejbo.jyu.fi/
ers’ optimism about AI projects at OP. By definition, optimism is perceived as practitioners’ “generalized positive outcome expectations” (Scheier & Carver 1985). In the case organization, although practitioners were predominantly optimistic, as they normalized and made meaning of the change, the immersed contradicting views of their antenarratives did not legitimize their optimism whatsoever. It rather indicated the dilemma of their sensemaking. It can be, therefore, concluded that practitioners do not fully comprehend what the AI technology is about, or at least to the extent where they feel that there is control over it. In this line of thought, and naturally, one may argue that the future is mostly uncertain and given the ‘black box’ complexity of AI and such technologies, the challenge is on explainability without creating contradictory logics. Even if the contradiction is on the part of the organization and practitioners are usually confronted with dilemmas (Weick 1979) it must be managed efficiently as it often is considered a dysfunctional state (Clegg et al. 2002; Vandelannoitte 2012). What is most interesting in the findings is the question (Q1) of, what triggers practitioners to be exceedingly optimistic while contradicting sensemaking evolves in their antenarrative?

In this case, one key reason that practitioners stay overly optimistic revolves around the cyclic nature of sensemaking. This is the nature of a bet on the future as it is largely ‘retrospective sensemaking’ (Weick 1979) and practitioners fall into the trap of “bounded rationality” (Cyert & March 1963).

At best, to ward off this challenge, firms must build capabilities to attend to contradictions (Cameron & Quinn 1988; Poole & Van de Ven 1989). However, in the case organization, regardless of their optimism, their confidence in terms of capabilities to overcome the contradicting views was absent. Strictly focusing on the future without knowing their own capabilities and developing it, organizations fall victim to fashion. Therefore, “knowing thyself” is equally important to “dare to be different” (Mintzberg 1994, quoted from Tsoukas & Shepherd 2004). This brings us to the second question (Q2), should one bring change that poses uncertain trends (e.g. AI-led change) for the sake of competition? or, one shall understand the internal capabilities (or align the capabilities to the change implemented)? Arguably, with this logic, one way to make prospective sense also revolves around resolving the contradiction that questions capabilities to manage the change and unfolding events. Rather than falling into the trap of “ecological rationality” (Goldstein & Gigerenzer 2002) that competition being the referring point for the needed change, practitioners’ perhaps should also make sense of their capabilities to manage the change (Eisenhardt & Martin 2000).

The other finding of this study calls for understanding the dynamics between ‘speed of change’ and ‘prospective sensemaking’. This finding also aids the notion of time being central to strategic change (Kunisch et al. 2017). Research shows that the rapid change has a negative relationship with performance. Therefore, excessive change in a short time is ineffective and disruptive in that it does not assure the success of the change (Zhang & Rajagopalan 2010). For that reason, understanding the dynamics of prospective sensemaking and the speed of change is called for. In line with this call, at times sensemaking can be beyond one’s control as they make sense of the events and of the implication of that change. In the meanwhile, senior management can construct their ‘sense-giving’ to influence sensemaking (Dunford & Jones 2000), especially as it influences the prospective future. The speed of change that emerges from technological (e.g. AI-led) projects creates hyper-competition (D’Aveni 1994), and is believed to be faster (“high-velocity”) (Tsoukas & Shepherd 2004; Eisenhardt 1989). This requires more attention toward sense-giving than sensemaking—insofar as change is so rapid that plausibility in prospective sensemaking is obscured.

At a basic level, sense-giving is different from sensemaking in that the practitioners trying to give sense are trying to influence involved practitioners to construct and reconstruct the meaning of change in order to understand the nature of the intended strategic change (Gioia & Chittipeddi 1991). While managing the strategic change, sense-giving consists of two major activities: 1) to provide a narrative that explains the nature of change, and 2) to construct aligned discourses that guide practitioners throughout the change journey. In other terms, sense-giving manages sensemaking through narrative (Ala-Laurinaho et al. 2017; Kraft et al. 2015; Maitlis & Lawrence 2007; Rouleau 2005). Top managers, such as ‘change strategists’ who imagine themselves as leaders in AI-based digitalization, are to influence the ‘change implementers’, who enact the vision, and ‘change recipients’, who make sense of the changes. Failing to do so, may bring about failure to adopt the change in practice (see Kanter et al. 1992). Putting this notion in perspective, perhaps more importantly, this study suggests, rather than focusing only on how practitioners prospectively make sense, that what seems necessary is how to sense-give prospectively through the narrative by keeping ‘speed of change’ in consideration. Therefore, identifying change recipients’ antenarratives (e.g. their dilemma) to construct sense-giving and re-framing practitioners’ sensemaking possibly align and support their change initiatives as visioned by change strategists.

There is a strong temptation in how AI as a project, regardless of its vague risks, is meaningful (meaning-making) to practitioners. This is the other reason practitioners embrace optimism with their ‘meaning-making’ process. From this perspective, Barry and Elmes (1997) address that due to the ever-growing unpredictability, rapidly fleeting opportunities require tomorrow’s organizations and their employees to think quickly. Such an instance is the seed of a crisis situation (like in Weick 1988), where confusion and ambiguity prevail, and one has to make meaning of their actions. Aligning to the view of Wrzesniewski et al. (2003) of practitioners as active meaning-constructors, meaning-making (Van den Heuvel et al. 2009) is the other area of research that potentially complements the strategic narrative of organizations, where practitioners ‘make meaning’ with ambiguous events that are yet to unfold in a non-linear organizational domain. Practitioners naturally seek to make meaning out of their own sensemaking, nevertheless, our extended research could focus on the question (Q3), how can a change strategist (or a change implementer) sense-give in an organization so that change recipients make meaning of the change? The meaning-making antenarratives that evolve during change must be identified and collected to build wider stories that positively influence sensemaking.

In terms of the contradiction that appeared in the case organization, this cognizance can be explained through complexity theory in that organizations are composed of a complex adaptive system (Gell-Mann 1994; Goodwin 1994), and chaos theory in that organizations work in a chaotic system where open, dynamic non-linearity is involved. Although chaos by definition is a random but deterministically driven behavior, practitioners organize both stability and instability through their artifacts. Sometimes contradictions appear in the evaluation-choice-action-process (Thietart & Forgues 1995). This nature of sensemaking hints at the confusion among practitioners and creates ‘sensemaking gaps’ where meaning reestablishment is initiated.
(Maitlis & Lawrence 2007). To accomplish meaning-making understanding, a plausible account is necessary (Rouleau & Balogun 2011). Therefore, if a change strategist (or a change implementer) is able to sense-give with a plausible account that directs change recipients’ meaning-making of the future, it becomes possible to avoid sensemaking gaps.

The narrative as discursive artifacts for sensemaking (Balogun et al. 2014)—fragmented narratives where the beginning or the end is implicit—involves ideas that have not been widely shared and can be conceptualized as antenarratives, which can form fully developed storylines (Boje 2008; see also Vaara et al. 2016). If that seems to be the case, the contradictory logics as forms of antenarratives appeal studies to understand the question (Q4), how do practitioners use their antenarratives to stabilize and destabilize the complexity and chaotic advancement of technology, such as AI, and associated events that unfold?

The study finally urges that, given the non-linear business scenario, our research endeavor should align with understanding prospective sensemaking in both spiral and rhizomatic antenarratives. Inasmuch as, in the case of the OP group, practitioners reflected cyclic antenarratives through normalizing change (by responding to change) and making meaning (by anticipating benefit). This is by nature too abstract to be reliable enough to predict future (See Boje 2011: 9; McCloskey 1990) and still mainly revolve around the retrospective. Furthermore, the contradicting views identified in the case study and the aforementioned questions (Q1, Q2, Q3, and Q4) remain blind spots to be explored in the future.

To sum up, the motivation of this study roots in understanding how practitioners make sense of a future where wide uncertainty prevails. This study does not offer the ultimate method to make prospective sense, rather it presents antenarratives as themes that positively or negatively affect the sensemaking that directs the future (at least in the case organization, or allied context). One main idea that aligns with Liu and de Rond (2015) is the notion that managers and their stakeholders tend to revolve around the illusion that the world is more controllable and predictable than it really is. These illusions bring about more costly errors. Therefore, this paper encourages practitioners to recognize antenarratives as significant indicators that provide prospective sensemaking. The answer to the question, are we still playing in the unprecedented uncertainties?, may not be a crisp “yes” or “no”, however, an imperative part of strategy work is that one should identify emerging stories that indicate the prospective clues, and to foresee the future as closely as possible to avoid roadblocks on the strategic journey.

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## Appendix 1

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<td>UM3</td>
<td>1/2019</td>
</tr>
<tr>
<td>7</td>
<td>Upper Manager</td>
<td>40 mins</td>
<td>UM4</td>
<td>2/2019</td>
</tr>
<tr>
<td>8</td>
<td>Upper Manager</td>
<td>45 mins</td>
<td>UM5</td>
<td>2/2019</td>
</tr>
<tr>
<td>9</td>
<td>Upper Manager</td>
<td>55 mins</td>
<td>UM6</td>
<td>2/2019</td>
</tr>
<tr>
<td>10</td>
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<td>47 mins</td>
<td>UM7</td>
<td>1/2019</td>
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<tr>
<td>11</td>
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<td>UM8</td>
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</tr>
<tr>
<td>12</td>
<td>Upper Manager</td>
<td>32 mins</td>
<td>UM9</td>
<td>1/2019</td>
</tr>
<tr>
<td>13</td>
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<td>58 mins</td>
<td>MM1</td>
<td>11/2018</td>
</tr>
<tr>
<td>14</td>
<td>Middle Manager</td>
<td>61 mins</td>
<td>MM2</td>
<td>1/2019</td>
</tr>
<tr>
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<td>52 mins</td>
<td>MM3</td>
<td>3/2019</td>
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<tr>
<td>16</td>
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<td>19 mins</td>
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<td>12/2018</td>
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<tr>
<td>18</td>
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<td>33 mins</td>
<td>MM6</td>
<td>1/2019</td>
</tr>
<tr>
<td>19</td>
<td>Operatives</td>
<td>31 mins</td>
<td>OP1</td>
<td>12/2018</td>
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<tr>
<td>20</td>
<td>Operatives</td>
<td>21 mins</td>
<td>OP2</td>
<td>12/2018</td>
</tr>
<tr>
<td>21</td>
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<td>33 mins</td>
<td>OP3</td>
<td>12/2018</td>
</tr>
<tr>
<td>22</td>
<td>Operatives</td>
<td>25 mins</td>
<td>OP4</td>
<td>12/2018</td>
</tr>
<tr>
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<td>25 mins</td>
<td>OP5</td>
<td>12/2018</td>
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<tr>
<td>24</td>
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<td>22 mins</td>
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<td>12/2018</td>
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<tr>
<td>25</td>
<td>Operatives</td>
<td>34 mins</td>
<td>OP7</td>
<td>12/2018</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>971 mins</strong></td>
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Economics of Esports

Esa Mangeloja

Abstract
In this paper, esports market development is exhibited and analyzed through various data sources and literature review. Additionally, economic concepts are applied to the esports environment. Demand characteristics of this emerging market are analyzed by applying the concept of competitive balance as commonly used in economics of sport scrutiny. The elite esports demand is proxied by gathering data on total prize money in the elite esports tournaments and explaining the esports demand by testing various factors measuring the competitive market properties. The most commonly used measurement in economics of sport for measuring within-season competitive balance is calculated as the actual standard deviation of winning percentages to the hypothesized ideal standard deviation. Nevertheless, unique market properties of esports require novel methods and measurements. Therefore, alternative methods for measuring competitive environment properties in esports markets are developed and tested. Statistical moment methods enable the measuring of the distributional properties of prize money deviation. Distributional information is applied for constructing various index measures for testing the esports market competitive balance and that information is modeled in regression estimations for explaining the demand properties of elite esports markets. One of the main contributions of this paper is to underline the different characteristics of the esports market compared to the traditional sport environment. Finally, esports market UOH testing results are contrasted with research findings from traditional elite sports markets. It appears that esports market demand is better modelled by applying “superstar” models by Rosen (1981) and Adler (1985) than traditional within-season variation UOH models.

Keywords: esports, Sport Economics, competitive balance, uncertainty of outcome hypothesis (UOH), superstars

Introduction
Esports has gained tremendous success in the global entertainment market and the prize money distributed in the elite esports tournaments has increased to respectable levels. In this paper, esports market characteristics are presented and examined from the viewpoint of economics. Market growth properties are illuminated by applying recent data sources and the special characteristics of the esports business model are analyzed. Following the literature review, market growth factors are investigated by applying the demand theory of sport economics. Empirical testing of the competitive balance hypothesis is conducted for the esports market. The results contribute to the existing economics of sport literature by revealing interesting unique characteristics of the esports market compared to traditional sports. In this paper, novel competitive balance indicators are presented for enabling efficient sports market scrutiny also in the following years.

An official definition of esports does not exist, as the collected literature has multiple definitions. Typically, the term esports (electronic sports) refers to organized competitive video gaming among professional players. It should be emphasized that all three criteria (organized, competitive, professional) must be met in order to fit the definition of esports. Gaming at home, as a hobby, is not considered to be esports. Esports is usually practiced in a league tournament format, with a specific goal or prize, such as winning a championship title or prize money. Thus, esports is another term for competitive video games. It simply refers to a computer game played in professional competitions, especially when it is watched by fans and broadcast on the Internet or on television. Although there are many games that can be included in this context, the most popular games are generally team-based multi-player games from the first-person shooter or multiplayer online battle arena genre. Video games most commonly played in esports tournaments are real-time strategy, fighting, first-person shooter (FPS) and multiplayer online battle arena (MOBA)-type games. A little less popular are the
video game versions of classic sports (such as FIFA football) or motor racing games.

The most actively researched topic in economics of sport is scrutiny on the properties of professional sport demand. Theoretical ground in economics of sport research is based on Rotenberg’s (1956) seminal analysis of the uncertainty of outcome hypothesis (UOH). There exists a wide literature on empirical research on the validity of UOH in football, soccer and baseball, but those theoretical concepts are not yet applied to esports markets.

It has been estimated that currently, about 1 billion people around the world are following video game tournaments. For context, the global esports audience is already double the size of the global audience for Formula 1 motor racing, eight times bigger than the TV audience for the baseball World Series and 10 times bigger than the number of people who watched the 2019 Super Bowl. Most esports fans come from Asia. About 40 percent of internet users in China (more than 300 million people) already report watching esports, while one-third of internet users in Vietnam say they have recently watched a video game tournament. In Finland, esports is currently the most popular sport among 18–29-year-old males. Traditionally, ice hockey has been the favorite sport in Finland, but now, 53 percent of Finnish young males rank esports as the most interesting sport (Sponsor Insight, press release 19.03.2019).

The audience can watch esports competitions by either visiting the arena live or online through gaming broadcasters, such as Twitch. There were approximately 380 million esports viewers in 2018, and that number is expected to increase to about 557 million viewers by 2021, according to an analyst company, Newzoo. Of those 557 million projected viewers, 307 million will identify as “occasional viewers” and 250 million will label themselves “esports enthusiasts” (Newzoo 2019).

To understand how esports teams make money, it is easiest to contrast them with traditional sports teams. While traditional sports teams have massive stadiums and usually regional fan bases, esports are streamed online, so fan bases are not as localized. As a result, while traditional sports teams can generate revenue by selling tickets and concessions to fans coming to their home stadiums, esports teams generally cannot tap into that revenue stream. Spending by esports fans is lower than that of the fans of other sports. According to Pricewaterhouse-Coopers (PwC), in the US (year 2017), an average esports fan’s spending on esports was 3.6 USD, while average spending on conventional sports was 54 USD (PwC 2019).

Similarly, traditional sports teams frequently own broadcasting rights to their games, while esports teams largely do not enjoy that luxury. In 2016, Riot Games (the developer of League of Legends) declined the petition of a number of esports teams for revenue sharing and broadcasting rights. Instead, esports teams generate the vast majority of their money through sponsorship deals, of which estimates vary from 40% to around 95% of team revenue. Newzoo estimates that in 2018, 353.3 MUSD was generated in the esports industry through sponsorship deals. One problem with such one-sided revenue is that esports is such a rapidly changing industry. Games and teams can easily fade from popularity, causing their value to sponsoring companies to decrease, along with any associated sponsorship deals.

One interesting point to note is that, like pharmaceutical companies, game developers have enormous research and development costs. Much like the few drugs that pass regulatory approval and make it to market, very few games actually explode in popularity. Game developers must create a number of games and hope that at least one can hit it big, bringing in enough revenue to generate a profit after subtracting the costs for developing the others. Unfortunately, for developers, the cost of making these games is growing. Electronic Arts, for example, noted for fiscal year 2018 that research and development costs had risen to 1.3 BUSD, up 10% from the previous year.

Market growth

According to analysis by Newzoo, the esports global audience is estimated to be 454 million viewers, increasing to 645 million in 2022, and increasing about 15 percent on a year-to-year basis. The global esports market will generate 1.1 BUSD revenue in 2019 and is estimated to generate 1.65 BUSD in 2021 and 1.8 BUSD in 2022. The esports and games market combined will generate more global revenues in 2019 than the traditional sports market or the film industry (Kallinen-Kuisma & Auvinen 2018; Newzoo, 31.05.2019). Newzoo estimates that the whole global gaming market will generate 152.1 BUSD in 2019, implying 9.6% growth annually. GlobalWebIndex’s latest data show that nearly 3 in every 10 internet users now watch live streams of other people playing video games, equating to a global audience of close to 1.25 billion people. For the past eight years, the video game industry has earned, every year, more revenue than the music and music industries combined. According to Newzoo, global “brand investment revenues”, including advertising and sponsorships, will nearly double from 694 MUSD in 2018 to 1.39 BUSD by 2021. According to PwC, esports revenues totaled 805 MUSD in 2018, with the largest portion coming from sponsorships (277 MUSD), followed by media rights and streaming advertisements. PwC estimated that over the next three to five years, media rights revenue would grow to roughly 449 MUSD by 2022, implying an 11.5% growth rate (Koch 2019). During the same time period, sponsorship and advertising is estimated to grow by 5.5%. One of the most popular games, Fortnite, generated 2.4 BUSD in revenue during 2018 for its developer, Epic Games. Currently, it has over 200 million players worldwide.

When the Overwatch League debuted in January 2018, 415,000 viewers tuned in to watch. Participating gamers enjoy amazingly high salaries while competing for a prize pool totaling 3.5 MUSD. Asia-Pacific leads the global esports market and is projected to capture the largest market share, with 1.5 BUSD by 2022. Close behind, Europe and the US tie for second at 1.2 BUSD. Somewhat behind the curve due to the lack of fixed broadband, Latin America will account for just 100 MUSD of esports market share by 2022 (Newzoo, 31.05.2019). However, growth is expected in Brazil, Mexico and BRICS countries, where massive populations represent substantial, as-yet-unexploited growth potential.

The future for esports teams looks bright, as the rising trend of esports viewership has attracted millions on social media. There exist multiple paths to monetization of the esports market. Existing gaming mechanics allow multiple revenue streams, such as in-game betting. Merchandise such as branded shirts and mouse pads already bring in revenue for teams, and new opportunities keep opening up. Team-customized digital skins (different visual appearances for on-screen characters) pose a potential source of revenue. Also, esports-specific arenas could drive ticket sales, sponsorships, and ad revenue. Some of these arenas are already in the works. All this potential for future growth, on top of the sheer amount of capital already being invested in the industry, has given esports teams sky-high valuations. Many have estimated valuations of 100–200 MUSD.

An important difference compared to traditional sports is
that esports do not have a global governing body. Game companies often organize competitions, as they own the intellectual property rights in the case of every game. Nobody can organize a competition without permission from the game publisher. For example, Riot Games organizes the League of Legends Championship Series (LCS), and its rival, Valve (developer of Dota 2 and Counter-Strike), organizes The International. In addition to game producers, the oldest esports organization is ESL (Electronic Sports League), and another international organizer of competitions is the International e-Sports Federation (IeSF). The latter was founded in 2008 and has 50 member countries in five continents.

MVIS Global Video Gaming and eSports Index (MVESPO) measures the business performance of the global video gaming and esports segment companies. The index includes companies with at least 50% of their revenues from video gaming and esports. These companies include only those that develop video games and related software, hardware, and streaming services, and are involved in esports events. The MVIS Global Video Gaming and eSports Index covers at least 90% of the investable universe. As can be seen in Figure 1, the value of the MVESPO index has more than tripled during the last five years. This growth shows that the esports market is already able to generate continuing profits for the associated companies and investors.

**Business model of esports**

Many esports teams make a majority of their revenue, approximately 60-90%, from sponsorships and advertising. These revenue streams include sponsorships in exchange for advertisement on the player’s jerseys, like those of traditional sports. For example, the energy drink brand, Red Bull, and the smartphone company, HTC, have jersey sponsorships for Cloud9, a famous esports team. Sponsorship and advertising are followed by media rights (20%), game publishers’ royalties and merchandising and ticket sales (all with about equal shares of 10-15%). Sponsorships allow companies to gain potentially global recognition when the team qualifies for international tournaments. While jersey sponsorships are not as effective as they would be in traditional sports, since the camera is not centered around the players, the main reason why they sponsor esports teams is due to the teams’ strong social media presence.

Analogous to traditional sports, several international esports teams offer apparel and other related merchandise for the fans. These include, for example, jerseys and t-shirts, and other gaming related goods such as mouse pads, which target their unique audience. One issue stopping many teams from getting larger income from merchandise is that esports stadiums are still very small compared to traditional professional sports arenas. Since less fans can attend the actual games in person, incentive is lacking for fans to support teams at the stadium by wearing merchandise. Lee and Schoenstedt (2011) compare the fan behavior of esports and traditional sport fans. In their analysis, it is shown that, compared to traditional sports, esports consumers spend relatively little on sport merchandise and attendance. Therefore, it may be fair to assume that this is not yet an area of priority from the esports teams’ perspective, but the situation in the fan market can change in the future.

In the digital age, esports teams allow sponsors to target demographics that have traditionally been difficult to reach through traditional marketing tactics. Millennials typically watch less television and listen to the radio less often than older demographics, increasing the importance of social media marketing. It is found that the average age of esports viewers is 29, with 39% of the total audience in the 25-34 age range, thus implying that esports is an effective marketing channel towards a young audience. Many teams have marketing specialists working with the social media accounts of the team, and graphic design personnel to make content such as posters of their players for advertising. The importance of content creation is almost equal to team performance, as it is how the team can attempt to build fan bases. Though players are the ones operating in the public spotlight, esports teams typically have dedicated teams operating behind-the-scenes to serve larger fan bases. The majority of esports consumption occurs online. Several TV and internet companies have started to compete for the rights to broadcast events, as the industry is trying to attract...
young audiences. Meanwhile, online streaming continues to see impressive growth and will also likely contribute to the growth in consumption. Esports teams also make money through content creation on platforms such as YouTube and Twitch. While YouTube Gaming and Twitch have lately enjoyed tremendous growth, the entry of other main players such as Facebook also increases the near-term growth prospects of the gaming industry. With advertisement revenues on each view, the teams can keep funding high quality videos. The income from this sector is relatively small, but its spillover effects are huge in terms of reaching new audiences and expanding their fan base, which is currently the number one priority in attracting sponsors.

Many new esports teams require significant investments on top of sponsorships in order to pay for the increasing costs. While raising cash for esports teams was very difficult in the past, this is becoming much easier with esports becoming more recognized. As esports becomes more popular and accepted worldwide, player wages have increased significantly. Many of the more established players have high wages, with some going up to seven figures. This is very similar to traditional sports, where the high competition rewards “superstar” players, giving them significant negotiating power for demanding high wages. Another factor for the bidding up of wages is the high international labor mobility of esports players, with many teams in the US having players from Europe or Korea. On the other hand, there are also other costs related with labor, such as coaches and other staff. While these are smaller costs individually, they are larger in number. The number of non-technical staff is increasing, but the wage growth for these non-player employees is unlikely to match the pace of superstar player salaries.

In order to increase productivity of the players, many teams have chosen to use a “gaming house” system, where players live in the same facility and train up to 12 hours a day, while other everyday chores are all sorted out by staff, including chefs and cleaners.

Violence in esports

Most top-selling video games contain violence (Dill, Gentile, Richter and Dill, 2005) and most children prefer to play violent video games (Buchman and Funk, 1996). Violent content in video games has been shown to have social consequences and to affect human behavior. Meta-analysis by Greitemeyer and Mügge (2014) of the 98 independent studies with 36,965 participants revealed that there were significant associations with social outcomes for both violent video games and pro-social video games. Their conclusion is that violent video game play should be regarded as a risk factor for aggressive behavior. Some studies have also shown the differences in esports and traditional sports’ consumption. Articles by Hamari & Sjöblom (2017) and Sjöblom & Hamari (2017) attempt to explain the reasons for viewing esports through the Motivation Scale for Sport Consumption (MSSC). They found that, from the components of MSSC, the four highest positively and statistically significantly associated factors with the frequency of watching esports were: Watching sports as a means to escape everyday life, knowledge acquisition related to the sport, novelty of new players and teams, and, finally, the enjoyment of aggression and the aggressive behaviors the athletes exhibit. What is particularly interesting is that this last factor, “the aggression enjoyed by viewers”, has become less visible in traditional sports during our modern times. For example, Major League Baseball has taken major steps to reduce injuries in the game, such as implementing the collision rule in 2014, which penalizes intentional physical contact at home base. Many sports are also implementing video replay systems in order to accurately penalize rough plays, this being emphasized most recently in the soccer World Cup. Several restrictive rules have lately been applied in ice hockey, as the game has tried to reduce its popular image as a violent sport. Nevertheless, aggression is automatically implemented in most video games in the form of kills or attacks.

Famous esports games that build around aggression include shooting games like Counter-Strike or more mild games like Fortnite. What this means from the viewpoint of economics is that esports and traditional sports are not, from a consumption perspective, strong substitutes for each other. Therefore, there will be no need for esports to attract new consumers amongst the fans of traditional sports. This reduces one of the huge potential obstacles of future esports expansion. However, this also means that esports needs to make conscious efforts to amass their own consumer base, as it will not be able to simply attract the same consumers as traditional sports.

Increase of prize money

Prize money in esports is increasing at an incredible rate. While prize pools amounted to a mere couple thousand dollars at most in the past, they now reach several million dollars for large competitions. League of Legends, for example, distributed a total of 4.9 MUSD of their 2018 World Championships revenue to teams according to their final standings. This money does not go directly to the players, and most of it is absorbed by the team’s organizations. The esports team, in this sense, acts like a company, with the players as employees on yearly contracts.

Players’ most high-profile sources of income are tournaments, in which they compete for a cash prize. For the 2018-19 season, video game maker Epic Games promised 100 MUSD in prize money for Fortnite tournaments alone. Many players have turned to an online platform, Twitch, to livestream their games. Viewers can subscribe to a stream for only 4.99 USD per month, and the streamer gets half of that. With only 4,000 subscribers, that is about 120,000 USD per year, and the top streamers make much more. Some are reported to earn over 100,000 USD per month. Streamers can upload their recorded streams to YouTube, generating more revenue through views on that platform. Many streamers also have loyal fans who are willing to donate money, which brings in up to 5,000 USD per day for the top streamers. On top of all that, streamers can also partner with various brands to promote their products on their channels, sharing links to certain products on Amazon, for example. The best esports players are signed to teams, much like professional football or basketball players, and that represents yet another source of income. According to Forbes, the average starting North America League of Legends Championship Series (NA LCS) player salary is now over 320,000 USD (Heitner 2018). Teams are even starting to offer other benefits, like health insurance and 401k’s.

Some of the biggest game developers hold tournaments for their games, with a cash prize paid to the winner. Though expensive to host, these tournaments generate publicity for the games, and at least some of the costs can be offset via ticket sales, sponsorships, and advertisements. Additionally, the game developers own broadcasting rights. For larger tournaments, these rights can be worth a significant amount of money. In 2016, BAMTech (a streaming company owned by Major League Baseball and Disney) signed a deal with Riot Games for streaming rights through 2023, worth at least 300 MUSD. Similarly, in 2018, Activision Blizzard (maker of Overwatch) sold broad-
casting and streaming rights for its second season of the Overwatch League to three well-established companies (ESPN, ABC, and Disney), indicating esports’ growing mainstream appeal. Perhaps the most interesting feature of game revenue for these developers is the rise of microtransactions (small in-game purchases), such as skins. In Fortnite, as a free-to-play game, all its revenue is made through in-game transactions.

Theory and previous literature

In this empirical part of this paper, Rottenberg’s (1956) uncertainty of outcome hypothesis (UOH) is applied to the esports market. UOH is the most commonly applied theoretical tool in economics of sport scrutiny and it is based on the assumption that sports fans prefer to see games where competitor abilities are more evenly matched. Close sports contests imply uncertainty surrounding the outcome and that leads to increasing fan interest and attendance. Seminal research on UOH by Szymbanski (2003, 1156) notes that demand for game tickets is at maximum when a home team’s probability of winning is about twice that of the visiting team, implying a probability of about 0.6 – 0.7. Nevertheless, the empirical evidence is far from unambiguous. Uncertainty evidently offers excitement, but it is reasonable to expect that for many fans a preference for the home team reaching the playoffs would dominate preferences for suspense and balance (Mills & Fort 2018, 928).

Accordingly, evenly matched esports contests would increase fans’ interest for games and esports tournaments, leading ultimately to positive tournament prize money development. Currently, there exists no uniform measurement or statistics for competitive balance and various methods are applied in different markets. Competitive balance in esports is not previously well-defined, as the market is still pretty new and under a continuous development and reforming process.

Table 1 summarizes the results of selected previous economics of sport studies where the UOH hypothesis has been tested. Most previous research seems to find some indication for UOH, but the relation is far from consistent. None of the existing literature contains esports as a field of research.

Data

Data is derived from the databank of the “esportsearnings.com” website, which is the most used historical data source in the esports market. It is a community-driven competitive gaming resource based on freely available public information. Therefore, it is not moderated by any commercial gaming company or business organization, which increases its reliability as a trusted source. Software companies would maybe have an incentive to exaggerate esports growth figures, as that would give the market positive signals. As a community-driven data source, “esportsearnings.com” is becoming the most trusted source for esports data. Data applied consists of monthly observations during the period 1998-2019 (n=254).

We define esports attendance proxied by the total prize money paid in the professional esports tournaments. In esports, box office ticket sales are not the main issue representing demand of sport commodity. We assume that the demand side of esports is best reflected in the amount of total prize money in gaming tournaments.

Descriptive analysis of the data reveals interesting properties. While the prize money, the number of professional players, the number of attended countries and the number of professional teams has been increasing rapidly, the number of tournaments has actually been on a decreasing trend during the past three years. Therefore, it seems that the average prize money in tournaments has been increasing, but the main tournaments have been dominating the market. The number of various games played in professional tournaments has been stabilizing to about the level of 40 different games played. That is understandable, as players have to specialize in one game in which they try to prosper and gain fame. Therefore, we can assume

<table>
<thead>
<tr>
<th>Author</th>
<th>Data</th>
<th>Country</th>
<th>Sport / League</th>
<th>UOH significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Szymanski (2003)</td>
<td>review of 22 studies</td>
<td>UK, Australia</td>
<td>football, baseball, ice hockey, rugby</td>
<td>(+++) 10/22, (+) 7/22, (-) 5/22</td>
</tr>
<tr>
<td>Jane (2014)</td>
<td>2009-2012</td>
<td>US</td>
<td>NBA</td>
<td>(+) league-level;</td>
</tr>
<tr>
<td>(-) game-level</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coates &amp; Humphreys (2012)</td>
<td>2005-2010</td>
<td>US</td>
<td>NHL</td>
<td>(+)</td>
</tr>
</tbody>
</table>

Notes: ++ clear support for UOH, + weak support for UOH, - negative or no support for UOH

Table 1. Main results of previous UOH studies.
that the early phase of esports development has almost reached an end, and now the business is reaching a more stable market phase for continuing development.

Model

In order to test the UOH hypothesis, we formulate linear regression (OLS) models for the period 1998-2019 (n=254). In the models, the dependent variable is the change in total prize money, and the control variables include: the number of tournaments, the number of players in tournaments, the number of different games played, the number of teams in tournaments and the number of different countries from which the players originate. These are all important variables defining the esports markets and could all be argued to be significant explanatory variables for explaining the growth of elite tournament prize money and the demand of esports. UOH is tested by constructing and utilizing alternative index measures for proxying competitive balance properties in esports markets. The estimated models are formulated as:

$$\Delta \% \text{prize money}_t = \alpha + \beta_1 \text{tournaments}_t + \beta_2 \text{players}_t + \beta_3 \text{countries}_t + \beta_4 \text{games}_t + \beta_5 \text{teams}_t + \Xi_i \beta_i + \varepsilon$$

where $\Xi_i$ is a vector of alternative UOH indicators and $t$ is a time index.

There exists no uniform method for calculating and forming an index representing competitive balance in elite esports. The most commonly used measurement in economics of sport for measuring within-season competitive balance is "r ratio", which is calculated as the actual standard deviation of winning percentages to the hypothesized ideal standard deviation. Other alternative measurements include the Herfindahl-Hirschman Index and Gini coefficient. They are commonly applied when analyzing established football and baseball leagues, but they are not suitable in esports markets. Therefore, three alternative in-

![Figure 2. Development of the total number of professional esports tournaments. Data source: esportsearnings.com.](image)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>St. dev.</th>
<th>Min – Max</th>
</tr>
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<tr>
<td>Prize money</td>
<td>2 251 135</td>
<td>4 641 462</td>
<td>0 – 37 476 248</td>
</tr>
<tr>
<td># of tournaments</td>
<td>119.0</td>
<td>137.5</td>
<td>0 – 546</td>
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<td># of active players</td>
<td>869.8</td>
<td>1113.5</td>
<td>0 – 4440</td>
</tr>
<tr>
<td># of countries</td>
<td>33.8</td>
<td>27.2</td>
<td>0 – 93</td>
</tr>
<tr>
<td># of different games</td>
<td>17.3</td>
<td>14.7</td>
<td>0 – 59</td>
</tr>
<tr>
<td># of teams</td>
<td>53.5</td>
<td>60.0</td>
<td>0 – 226</td>
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<td>Mean earnings per player</td>
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<td>1666.0</td>
<td>0 – 13235.3</td>
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<tr>
<td>Median earnings per player</td>
<td>455.7</td>
<td>540.5</td>
<td>0 – 6000</td>
</tr>
<tr>
<td>Top player monthly earnings</td>
<td>96 895.4</td>
<td>259 035.3</td>
<td>0 – 2 246 832</td>
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<td>UOH index 1 ($\kappa$)</td>
<td>5.1</td>
<td>4.5</td>
<td>0.68 – 30.07</td>
</tr>
<tr>
<td>UOH index 2 ($\alpha$)</td>
<td>39.3</td>
<td>44.9</td>
<td>1 – 342.9</td>
</tr>
<tr>
<td>UOH index 3 ($\alpha$)</td>
<td>326.5</td>
<td>326.5</td>
<td>1 – 6219.9</td>
</tr>
</tbody>
</table>

Note: Model variables in levels. In a regression model, the variables are in first differences due to unit root properties. (n=254)
dex measures are constructed.

One potential earnings inequality measure is calculated by dividing the mean earnings per player by the median earnings per player. This indicator is labeled as “UOH index 1” and using Hebrew letter א. Alternative methods include the ratio of top earnings in relation to mean (“UOH index 2”, ב) or median (“UOH index 3”, ג) earnings per player. The larger value of constructed UOH indexes implies more competitive unbalance between the players of the tournament. If competitive balance is an important factor for prize money accumulation, negative sign is assumed for the regression coefficient estimator. Unity index value would imply perfect balance between competitors. In that case, all prize money would be distributed evenly between players.

Results

Table 2 presents (p. 37) the descriptive statistics of the variables used in analysis. Several variables were found being non-stationary and contained unit roots, which was tested using an Augmented Dickey-Fuller test procedure. Those variables were transformed into logarithmic first differences in the final regressions to ensure the robust statistical properties of the estimations.

Table 3 (below) presents the estimation results. Two of the tested coefficients for competitive balance (UOH index 1 and UOH index 3) are statistically significant, but positive. UOH index 2 is unsignificant, implying that the mean of prize money earnings does not contain enough information to reflect competitive balance when related to top earnings figures. Fortunately, index measurements UOH index 1 and UOH index 3 succeed in gathering information on the competitive balance situation and they are statistically significant. Nevertheless, the signs of both estimated coefficients are positive, signaling rejection of the UOH hypothesis. This implies that more competitive unbalance is related to more demand for esports. Fans love to see superstars and pay for the opportunity to see them playing. As Adler (1985) has shown, fans need superstars and even with no difference in talent, the market demand supports the creation of superstars in the sports arena.

Esports fans prefer to see famous megastars playing competitive games. Huge prize money and astronomical monthly earnings of the best esports professionals make the esports entertainment appealing and increase its popularity as it gets emerging media attention. Market of superstars is modeled by Rosen and Adler and their ideas seem to fit well in the esports markets. Rosen (1981) explains why large differences in earnings could exist where there are only small differences in talent, and Adler (1985) has shown why large differences in earnings could exist even where there are no differences in talent at all. Those models give an explanation for why the wage spread of elite players has grown enormously while, probably, the differences in talent are relatively small in the esports environment.

Conclusion

The empirical results of this paper contribute to the existing economics of sport literature by applying the esports market as a field of economic scrutiny for demand analysis. Esports has enjoyed tremendous success, measured by media interest, fan base, business revenue and tournament prize money. Competitive balance is the most commonly considered demand factor when explaining sport demand. Nevertheless, according to the empirical results of this paper, the esports market has unique
characteristics. Esports demand and elite tournament prize money increase are not dependent on competitive balance as implicated by the UOH hypothesis and previously found in the leagues of traditional sports. Esports fans seem to like to watch their favorite players succeed, and global superstars attract new players and new revenue to the market.

The esports market continues to expand strongly and it should be kept in mind that the video game market is already worth more than the music and movie industries combined. Gross video game sales have outweighed box office receipts for over two decades, and they surpassed home video and theatre earnings combined fifteen years ago. The video games industry has earned more revenue than the music and movies industries combined every year for the past eight years. In 2019, the global video game market is estimated to be 120-150 BUSD, up over 20 percent from the previous years, and surpassing the projected total global box office for the film industry of 41.7 BUSD or the global music industry of 19.1 BUSD (Statista 2019).

As e-sports is recognized as an official branch of sport by a growing number of countries, it is becoming increasingly attractive to major sponsors and investors. The surge in games that are optimized for mobile platforms, and the evolution of the internet, points to the likelihood of esports becoming even more widespread, as virtual and augmented reality (VR) will make it possible to enhance the gaming experience of the fans. In the future, an increasing number of sponsors, players and spectators will find esports to be their preferred entertainment and business environment. The growth requires some additional, strong international organizations and rules of conduct to enable fair market practices. It is essential to provide a reassuring answer to the prevention of doping and cheating, and to channel esports gambling and betting into a regulated and transparent framework.

The market of esports has exhibited a huge increase in volume, tournament prize money and fan interest. Traditional models for elite sport demand assume balanced competition to be a positive factor for enabling continuing demand, but in the esports market, fans appear to be demanding skillful performances, and the increasing growth of elite players’ paychecks seems to persuade more fans to gather in sports arenas and Twitch channels to watch their favorite players dominate the esports mega-tournaments. The electronic sports market has only recently been approaching a mature state of development, and the unbiased competition has not yet reached a level that would disturb the huge increase of the esports market. At this current stage of market development, the paying public and fan base searches for megastars and leading champions to identify with. The media presents esports megastars and astronomically high prize money winners, which supports the storytelling of esports. This “from nerds to riches” storytelling gives a huge boost to the continuing expansion of the esports business.

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JEL codes: Z2, Z29
Impact of Artificial Intelligence on Management

Niilo Nponen

Abstract
This study focuses on the impact of advancing Artificial Intelligence systems on management during the next decade. Much of the attention around Artificial Intelligence and work revolves around the replacement versus augmentation debate. According to previous literature, rather than simply replacing tasks, machine learning tools can complement human decision making. Based on semi-structured expert interviews, this study provides tentative evidence that this may be true for managers on the highest level of organisations, but perhaps less so for operational and middle managers who may find a larger number of their tasks replaced. As routine tasks of supervision and administration can be automated, the shift towards interpersonal tasks of leadership could continue for many managers. Two possible future scenarios are formed to illustrate how Artificial Intelligence may possibly impact management. In addition, algorithmic management is recognised as an important factor in the next decade as platform economy keeps growing. Having potential to replace tasks of the operative managers, it is important to continue research on fairer algorithmic management. Also for further studies it is recommended to evaluate AI’s impact on each level of managers separately, because of the disparate work tasks of operative, middle and senior managers.

Key Words: Management, Leadership, Artificial Intelligence, Algorithmic Management

Introduction
The research problem of this study is to empirically evaluate Artificial Intelligence’s (AI) impact on managers. The impact is evaluated on the different aspects managers’ work tasks may include, such as administration, supervision and leadership. In this study all people whose occupation is to lead people or manage operations are referred to as managers, despite the varying ratios they perform these tasks. Rather than evaluating managers as a homogeneous group, they are divided to operative, middle and senior levels for a more precise evaluation. The aim is not to provide a certain forecast, but to compare possible future scenarios to better understand the phenomenon.

Brynjolfsson & Mitchell (2017) state that most sectors of work and economy are at the beginning of a large transformation caused by recent advances in machine learning. Unlike previous forms of technology, the most recent breakthroughs in AI can also affect multiple highly skilled and highly paid occupations (Frank et al., 2019). Naturally a lot of debate and polar opinions exist about what this means for different professions and for the future of work. According to Makridakis (2017, 57) some technology experts claim that this AI revolution could change society even more than industrial revolution did. At the same time, others argue that the impact of AI is widely overestimated.

While the dialogue on AI and work has mainly focused on the potentially replacing effect it may have on different occupations, its impact on management has received less attention. Frey and Osborne (2013, 44-45) label managers’ occupation in the category of low risk for automation. Authors such as Autor (2015) and Jarrahi (2018) have also claimed that AI offers augmented decision making rather than job replacement for managers. However, there seems to be evidence that management and leadership may be at the start of a transformation. Algorithmic management in platform and gig economy has introduced a new way
of supervising workforce (Rosenblat and Stark, 2015). Meanwhile, Auvinen (2017, 42) states that this wave of digitalisation is at a point where its first impacts on leadership can also be identified, for example with the concept of a virtual leader.

**Literature review**

AI – About the history and definitions

In this study the original definition by McCarthy, Minsky, Rochester and Shannon (1955, 11) is used to broadly describe Artificial Intelligence as action performed by a machine that would be considered intelligent if done by human. AI is considered a hypernym to developments within it, such as machine learning and deep learning. Many more narrow definitions exist, but for the purposes of this study, if a machine is able to perform a task previously done by a human manager, it is considered as artificial intelligence.

In its history of over 60 years, AI has seen multiple cycles of initial excitement followed by eventual disappointment (Pan, 2016, 410). In the beginning of these cycles, recent advancements led to claims such as that effectively every single human task could be performed by a machine in just a few years. As these hopes proved overoptimistic, a period of “AI winter” would follow, with less outside funding and enthusiasm for research in the field. (Kaplan, 2016, 15-16.)

Still throughout the years, the AI field has given numerous demonstrations of advancement. From Arthur’s (1959) checkers program to AlphaZero’s (Silver et al., 2017) chess and Go mastering reinforcement learning algorithm, many of the mainstream milestones have been beating human players in games. At the same time AI has increasingly been used to tackle numerous real world problems, such as cyber-attack detection and credit card transaction reviews (Kaplan, 2016, 39).

According to Remes (2018, 32-39) the rapid adaptation of AI programs in various industries during the last ten years has happened because programmers now have enough data and computing power to develop deep learning systems, based on the neural network research of previous decades. As it stands though, even the most sophisticated deep learning software can be incredibly efficient in the task it is trained to do, but completely clueless when assigned a different task. Still, even as the coveted artificial general intelligence may be years away, these learning systems do have demonstrated benefits in the growing number of tasks they are assigned to (Frank et al., 2019).

AI in organisations

The role of technology in leadership and management has been recognised for some time. E-leadership is defined by Avolio, Canada and Dodge (2001, 617) as IT-mediated means to produce change in organisations. Reviewing the theory, Avolio, Sosik, Kahai and Baker (2014, 106) state that both the science and practice of leadership has dragged behind the adoption of advancing technology in organisations. They argued that rather than focusing on predicting the most desirable practices, the leadership field has reactively studied the impact technology already has had.

According to Auvinen (2017, 37) leadership is shifting from the scientific management of the last century towards structures of lower hierarchy in order to enhance creativity, participation and digital innovations. Also Auvinen et al. (2019) claim that there has been an epoch change in leadership as the embodied presence of the leader has seemed to transform into digital platforms. The need for actual leadership has not disappeared, but the methods of communication and presence of the leader have been somewhat digitalised.

Another example of digitalisation is in the area of platform economy, where algorithmic management is used to connect customers and workers. Lee et al. (2015) define algorithmic management as managerial functions performed by software algorithms and their supportive devices. Lee at al. point that in addition to the newer companies in the platform economy, algorithmic management has been increasingly introduced to optimise, allocate and evaluate work in traditional occupations from warehouses to coffee shops.

This arrangement between the worker and the digital manager raises a completely new dynamic. Algorithmic management has been praised for the potential freedom it provides workers, but it has faced criticism for the exploitative information asymmetries that favour the company (Rosenblat and Stark, 2015, 3758). In her thesis, Tammisalo (2019, 63-64) concludes that while employees in a financial institution prefer the more emotionally intelligent feedback of human managers, they also see the value of the instant input that AI can enable as a part of the feedback.

There has been some conversation about what the advent of novel technology means for managers. A study by Frey and Osborne (2013, 40-45) claims that while workers in many fields are in a high risk of automation, managers are less likely to be replaced as their work consists of tasks demanding social intelligence. Similarly as Pulliainen (2019, 84) states in her thesis, many senior level managers are not worried about replacement as they see AI as a complementary tool they can use to be more efficient. Other studies support this augmenting view as well. Jarrahi (2018, 577) highlights the potential of an AI system with vast computational capability paired with the more holistic intuition of a human manager. Autor (2015, 5) claims that historically scholars and journalists alike have overestimated the labour replacing power of advancing technology, while missing that automation also augments human skills, creates new work tasks and increases productivity and demand.

Still according to Makridakis (2017) some people in the field of AI claim that this time it is different, as task after task can be replaced. People supporting this revolutionary view of AI maintain that as far as demand for their labour, most workers of today are comparable to horses at the end of the 19th century. While optimists among this group believe that in the end this increased productivity will create a utopia for all, pessimists fear that it will lead to a dystopia for most. (Makridakis, 2017.)

As Arntz, Gregory and Zierahn (2016, 4) point, it is quite unlikely that in the near future every single task performed in an occupation could be automated. For example even if one day self-driving trucks replace drivers, human drivers may still be needed for other tasks such as loading and offloading goods. Therefore a task based approach is used in this study.

Based on the literature, AI can impact managers directly by replacing or augmenting certain work tasks. AI can also affect managers indirectly by causing changes in their working environment. Therefore the effects of AI can be divided to four levels: global level, level of society, level of organisational structure and level of managers’ work tasks.

In this hierarchy, changes can trickle up or down the levels. For example, if a country has a goal of being a global leader in AI technology, it may allocate funds of the society to empower AI development and education, which in turn could change the way organisations and their managers operate.

Furthermore, for more precise inspection, managers are split into three groups: operative managers, middle managers and senior managers. Operative managers are considered the lead-
ers of the workforce, middle managers are the leaders of operational management and the highest level senior managers are the leaders of middle management.

Methodology

Research strategy in this study is qualitative and interpretative (Eskola and Suoranta, 1998). The empirical data consists of six semi-structured thematic interviews (Kovalainen and Eriksson, 2008). The interviewees have been chosen using purposeful sampling (Patton, 2002). Using knowledge and expertise of AI as the requirement for participation, a high ranking group of authorities in research, data science and consultancy were selected.

As part of the ethical guidelines, the participants were asked for the permission to record and transcribe the interviews. The interviewees were also granted anonymity to allow the expression of personal opinions independent of affiliation. Therefore the informants' identities are codified and in the analysis section they are referred to as Experts 1-6. The more detailed overview on the empirical data is represented in the figure 1.

A similar set of questions were given to each expert, still providing freedom for the interviewee to focus on the aspects they saw most important on each topic. The questions are based on 1. How AI can replace managers' work tasks during the next decade and 2. How much AI can replace managers' work tasks during the next decade. Because of the difficulty of the topic, the main questions were sent to each participant for familiarisation before the interview. For practical purposes, the interviews were conducted on Skype. Before the actual interviews, two practice interviews were conducted to adjust the questions to better focus on the relevant themes.

Content analysis was used to group the data and to search for repetitive themes and patterns in it (Eskola and Suoranta, 1998). In expert interviews data collection and analysis often merge together, because the interview questions are customised for the expert group (Alastalo and Äkerman, 2010, 377-381). In this case it means that the divisions used in this study (as laid out at the end of chapter “AI in organisations”) largely shaped the structure of the questions in the interviews and the data analysis that followed. The interview tapes were transcribed and listened to carefully, to ensure correct understanding of the experts' ideas. Because of the nature of expert interview, no hidden meanings were searched for within the interviewees' speech, instead their answers were taken at face value. Experts' opinions were grouped and colour coded based on each topic to make analysis easier and more direct. Within these themes the answers were examined for similarities and differences.

Using the empirical data as a guide, two possible futures scenarios were formed to illustrate AI's possible impact on management. According to Godet (1994, 44) a scenario is a basic concept of futures studies that tells what logical chain of events leads to a plausible situation in the future. Scenarios can be divided to possible, probable and desirable scenarios. Possible scenarios are all the futures that can be envisioned as possible. Unlike probable and desirable scenarios, possible scenarios don't have to be as rigorously tested, because the function is to expand understanding of the potential events. Possible scenarios are evaluated by the logicality and plausibility of the events depicted. (Amara, 1991, 646-647.) As with any study regarding future, the three principles of futures studies apply: future cannot be perfectly foreseen, future is not predetermined and future can be influenced with acts and choices (Rubin, 2004).

As a limitation of this study, a relatively small sample size was used to gather the data. This study deals only with possible future scenarios, and does not make any statement of their probability. For probable or desirable scenarios, a Delphi method could be used. It is also important to remember that this study tries to chart out the impact of AI on managers' work tasks, from which is not possible to draw straightforward conclusions on what it might mean for their employment. For more extensive scrutiny on the topic, more research is needed.

Analysis

Revolutionary view

Based on the empirical evidence, the expert opinion on the impact of AI on management can be roughly split into two groups: revolutionary and evolutionary. The revolutionary group believes that due to the unforeseen capabilities of AI technology, managers' work tasks will be greatly affected on all levels.

These experts believe machine learning systems can be used in various white collar work tasks previously thought too difficult to replicate by machines. After decades of comparatively slow AI development for practical applications, the possibilities set by computing power have finally caught up with the neural network algorithms of old, leading to the breakthroughs of the last decade (Remes, 2018, 32-39). Some of the experts expect that the rate of change starts to grow exponentially in the coming years.

Expert 3: It is all about training. The pace of training the learning models starts to grow exponentially. In ten years I believe AI can teach AI and the exponential curve gets steeper. Based on human managers' history it is possible to make good conclusions, forecasts and finally decisions. That's why I believe management as it is now understood can be quite light when it comes to humans. Machines will be able to do almost all decisions and can make more logical insights based on better algorithms than humans can alone.

The growing capabilities of processing units indeed set the limits for AI development. Big datasets need a lot of computing power to fine tune the models, making it energy intensive and expensive. Therefore the most ambitious projects are mostly limited to the biggest players. Novel methods specifically built for AI, such as Cerebra's AI chip, may however change the landscape and make it possible for smaller organisations to develop models swiftly (Freund, 2019).

As the capabilities of AI systems grow larger, some of the experts suggest that managers should focus more on understand-
ing the technology. Many of them also suggest that positions such as Chief Technological Officer will become more important in the future.

Expert 1: Managers must increasingly think on how they use their time. Managers should probably be some in AI courses learning those tools more, instead of getting involved with routine or detail management. They should focus more on the big picture and focus on mastering A.I and robotics technology.

Evolutionary view
The evolutionary group believes that even though AI may impact managers in many ways, even replace some tasks, it will not cause any unforeseen changes in managers' work. They believe that while machine learning systems can automate some repetitive managerial tasks, the focus will merely shift to softer leadership skills. These tasks of motivation and encouragement are arguably harder to automate.

Expert 6: You don’t have to manage routines and processes. Instead it will be managing human capacity, interaction and empathy. In the narratives there’s been a lot about soft leadership skills. This I believe will be more common, lead-ing individuals.

This view of the second group is consistent with Laitinen’s (2018, 45) claim that we live in a society of work, in which political, cultural, social and economic factors define the meaning of work for the individual – while technology only defines what work is done within these parameters.

Similarly Autor (2015, 5-7) points that technological change also complements labour, raising the demand for non-automated tasks. Autor claims that workers in tasks complemented by automation benefit more than workers in tasks that are replaced. Based on the expert interviews, it thus seems likely that the impact of AI may be kinder for managers competent in interpersonal tasks such as communication, employee motivating and creative decision making, as the skills can be used to complement automated tasks. On the other hand, technological change may not be as welcome for managers whose skills are based on routine administrative tasks such as reporting, work supervision and synchronisation.

In his book Graeber (2018) defines a bullshit job as employment that is so unnecessary that even the employee cannot justify its existence – yet they have to pretend this is not the case to keep receiving their salary. Why this is a matter for this paper is because among the anecdotal evidence gathered for Graeber’s book is a number of testimonies by middle managers, HR managers and administrators, who confess that their work lack any meaning. Some middle managers claim that as their subordinates are mostly completely fine without their supervision, they perhaps have to invent unnecessary tasks to justify their existence, while their own bosses don’t know what they do. Naturally this is not a claim that all middle managers are unnecessary. Too many conclusions can’t be drawn from these personal stories, but it does make analysing changes in work more complicated. We tend to assume that other people are doing something useful, but who really knows what other people do at their jobs? Can a manager be replaced if their work was not needed in the first place?

AI’s impact on different levels of management
Perhaps unsurprisingly, most of the interviewed experts believe that AI’s impact is higher on operative and middle managers than on senior managers. On average the experts estimate that during the next ten years a third of the work tasks of operative and middle managers can be automated. For the senior managers the assumption is that slightly less than a quarter of the work tasks can be replaced by different AI methods. The interviewees explain that the two lowest levels of management contain more repetitive tasks of supervision that are easier to automate.

Expert 2: Automating operative tasks, such as administration, synchronising timetables, filling out work sheets and checking whether somebody did their work, is a very straightforward process.

Expert 5: The tasks that can be replaced are administrative, for example if you have a factory manager that uses a lot of time to adjusting duty schedules. And usually you should as it’s not very difficult. And if it saves half of a managers working hours, it is quite a valuable thing, I think that type of administration, excel optimisation and managing different matters will decline radically. How much it can replace a manager depends obviously on how much their work consists of that type of tasks.

The experts view that the amount of work for middle managers is connected to the number of operative managers they supervise. Along with the tasks of managers themselves, the overall demand of managers’ work may also fluctuate if the number of workers they supervise increases or decreases. For example, if a large number of workers are replaced because of automation or another reason, the amount of managerial tasks needed could also drop.

This potential shift to less managers may be desired by some. While Auvinen, Riivari and Sajaso (2018) highlight the need for the emotionally intelligent embodied leader, they also note that traditional leadership theories have been contested in favour of new-age approaches emphasising self-leadership, digitalisation and flexibility in a time of constant change. To enhance productivity, some organisations have chosen to ditch middle management, giving more freedom and responsibility to the employees. According to one of the experts, some professionals prefer lower levels of hierarchy and more shared governance.

Expert 6: In a study young managers in expert organisations thought that the flatter the organisation the better. In a sense the number of managers or middle managers goes down and there will be smaller team structures, in which leadership is shared between people.

Meanwhile it seems that the complementary aspects of AI benefit senior management the most. Many of the foreseeable advancements in AI seem to make senior managers jobs easier. For example high level decision making can be facilitated with dashboard systems giving real time information and suggestions of action.

Expert 4: There may be these dashboard systems that condense information and extend it in a sense. And they make some recommendations that in this situation you should proceed like this: before we have proceeded like this, and this way of operating has created these types of results.

Unlike the others, one of the experts believes that in the future, the impact of AI may be greater on the highest level of management. This is based on the idea of automated decision making: with enough data on human managers’ decisions and
their consequences, machine learning programs can be trained to select the most desirable decision for each situation. Meanwhile, this expert believes that when dealing with the challenges of leading the workforce, an algorithm may not be enough.

Expert 3: In operative management you need things that a computer cannot re-place. Hands-on teaching, especially in human resource management. AI can’t analyse a person in ten years as well as another human being.

Most of the other experts also believe that while the repetitive tasks can be replaced, managers can use more of their time to focus on tasks demanding softer leadership skills. Even though many tasks can be replaced, leadership is still necessary.

Shifts in the working environment also affect managers’ work. Between both countries and companies, global competition for AI supremacy may further accelerate the adaptation of new technologies. On national level experts believe that data protection legislation may decelerate the development and adaptation of AI systems, especially in public organisations. On the other hand, increased government funding can hasten AI development and provide more opportunities for organisations. As the experts point out, companies may be encouraged to utilize bold approaches to digitalisation as they seek the gains of the first player on the market, as Uber, Netflix and Spotify have done in their respective industries. Perhaps most crucially regarding this study, algorithmic management can make operative management redundant in companies using the methods of platform economy.

Algorithmic management in platform economy
Most experts identify platform economy as a factor that can cause disruption to the way organisations manage their workers. According to the opinions of the interviewees, it seems likely that the platform economy model will become more common in various industries. One can claim that with processes of algorithmic management, organisations are able to replace a large chunk of the tasks of operative management.

Expert 2: I guess that platform economy type thing – organising operations, which operative management is – will become more common. Certain tasks can be automated completely. For example in Uber, taxi automation is automated now. You don’t need managers for that.

Expert 3: I would say there will be more of this in different industries. Energy sector, insurance sector, these traditional industries will have more of these which will change the way of operating quite radically.

As the interviewed experts note, the ways of platform economy may not only change organisation structures, but the relation of employment and leader-ship as well.

Expert 6: When talking about AI and work, the influence is not just on work or tasks, because as AI enables larger and better systems of platform economy, it also transforms employment relationships. This allows the development of shorter, fixed-term employment resembling freelancing, which changes leader-ship away from leading teams. For example in Uber they don’t really have (the drivers as) employees. Then there is the question of does it change motivation and commitment, potentially having multiple employers.

Since its initial boom a decade ago, this sharing economy was met with wide-spread enthusiasm as it has been portrayed of creating the flexible jobs of the modern age, where workers can become their own bosses (Rosenblat, 2018). However, studies such as Lee et al. (2015) and Schneider (2018) have demonstrated some of the problems arising in platform companies such as Uber and TaskRabbit. According to Rosenblat and Stark (2015) Uber’s algorithmic man-agement creates power asymmetries, which has led to cases of worker and customer exploitation.

Based on the workers’ cries of exploitation under their algorithmic managers it seems that it has been harder to optimise for worker satisfaction than for the creation of monetary value for shareholders (Rosenblat and Stark, 2015). These examples point to a call for more research on how to make these platforms more just. After some initial disappointments in the platform economy there still exists hope for more shared governance and ownership – for example with platform cooperatives, as suggested by Schneider (2018).

Discussion
In light of the data, it seems that the impact AI may have on operative and middle management during the next decade may be somewhat understated. For senior managers however, the impact may be one of augmentation.

With technology such as automated decision making and dashboards that provide real time information, a smaller number of managers may be needed for supervisory and administrative tasks. Still, most of the interview experts stress the increasing importance of interpersonal leadership. Managers of any level excelling in soft leadership skills may be in higher demand in the near future, which corresponds to the longer progression of leadership shifting away from the scientific management of last century, demonstrated by Auvinen (2017).

Algorithmic management is interesting in the sense that it seems to be heading in opposite direction of this long time trend of leadership. Many companies operating in platform economy are implementing methods that could be described as scientific management, with clearly defined specific tasks, roles and objectives. In a sense the platforms are often designed to make workers operate as reliably as machines. One way to explain this phenomenon is that some of these platform economy jobs are precursors for further automation. For example in the future, more rides may be conducted by self-driving cars instead of Uber drivers and restaurant takeout orders may be delivered by drones instead of Deliveroo riders.

The nature of this virtual manager poses some interesting questions. According to Sintonen and Auvinen (2009) the ownership of leadership power is ambiguous and blurred. As they claim (Sintonen and Auvinen, 2009, 107) it is the story rather than the leader as a person who leads. In other words, the members of an organisation follow the meaning integrated in the story rather than the leader as a person. When leadership integrates into digital platforms, the question of who is actually leading can become even more blurred. One could argue that in principle a leader can have more direct control and exact orders than before by using algorithmic management. But at the same time it is not always clear how a machine learning algorithm makes decisions, even to the programmer in charge of optimising it – let alone for the person who commissioned it. Indeed, the responsibility of programmers seems to be growing as these platforms control the work of millions of people around the world. In these situations the goals and values that are directly or indirectly affecting the algorithm are essential in
shaping how it operates.

Even with the concerns raised in this study, it is good to remember that the recent and future breakthroughs of AI are part of the technological progress that has arguably raised the quality of life and increased productivity during the last centuries. The main issue remains the same: what actions to take to make sure the spoils are evenly shared between people.

Conclusion

Previous literature (Frey and Osborne, 2013; Autor, 2015; Jarrah, 2018) recognise the potential of advancing AI technologies, but estimate that for managers the impact will be one of automation rather than replacement. Based on the expert interviews conducted for this study, it seems that AI may augment highest level senior managers more than operative and middle managers, whose work tasks could be more prone for automation. The methods of platform economy may also affect operative management the most.

The findings implicate the importance of just algorithmic management systems as the model of platform economy seems to spread. More research is still needed on the various aspects necessary for a solid algorithmic management system. Leadership and management scholars could surely have valuable insight on this matter.

In addition, two groups could be distinguished of the experts – revolutionary and evolutionary. The former believe AI has transformational potential for most occupations, including managers. On the other hand, the evolutionary view stresses that new technology mainly complements managers’ skills. While other tasks may be automated, the skills that are harder to replace become more important. As routine administrative tasks may be automated, interpersonal leadership skills could become even more crucial in the future.

Based on the revolutionary and evolutionary views as well as the indications by Amara (1991, 646-647), two possible scenarios can be mapped out for management in the next decade or so. The extensive forecast of advancing technologies by Kuusisto and Linturi (2018) is used as a loose guideline for this author’s imagination. The aim is to provide two opposing scenarios to broaden the understanding of how AI can possibly impact management - not to speculate which one is more likely to happen.

In the revolutionary scenario, the continuing AI development sweeps across industries, transforming societies with unprecedented velocity. AI enhanced technological breakthroughs keep lowering the marginal costs of goods – most importantly food and energy production become largely automated. A large percentage of permanent workforce from cashiers to radiologists switch to freelance work in gig economy. The need for operative and middle managers plummets as their administrative tasks are automated, and old and new companies alike adopt the ways of platform economy. In companies with expert workers, employees prefer lower hierarchy and shared governance. People get used to the reliable, sincere and immediate feedback in their fine-tuned algorithmic management platforms. From Jürgen Klopp to Gandhi and Gandalf, organisations can perhaps choose as their leader a virtual version of a football manager, a historical figure or a fictional leader that matches their mission and story. In addition to human relations management, most of the human managers’ tasks left can be performed mainly by the senior management. A smaller group of leaders is able to choose the direction their organisation takes, augmented with automated decision making systems and dashboards that provide real-time information. As an organisation is able to change its whole operating model for each day of the week if the algorithms so suggest, leadership and management theories of old have to be rewritten.

In the evolutionary scenario, AI continues to develop and disrupt industries, although not as widely as in the revolutionary scenario. Industries keep adopting the new possibilities of automation, but for the managers the impact is not as strong as for some of the workers. As societies are built around working individuals, people whose tasks were automated are retrained for new tasks created by AI, such as supervisors of automated road and drone traffic. Platform economy doesn’t transform industries as much as originally expected, mainly impacting some of the new companies and industries only. Algorithmic management becomes more common, but human administration and oversight is still preferred, especially in more traditional organisations. Even though some of the repetitive supervisory and administrative tasks are automated, the complementary effects of AI help operative, middle and senior managers to better focus on interpersonal leadership skills. Operative and middle management are impacted slightly more than senior management after the adoption of slightly flatter organisational structures. As the shift from management to leadership continues, much of the responsibility of leaders contain tasks of employee motivation, engagement and satisfaction. Even though technological breakthroughs in AI and other fields continue, the role and tasks of leaders and managers evolve gradually, but do not transform into something completely different.

Even though the rate of change in these scenarios is different, what is common is that in both changes caused by AI are not predetermined. Just like a hammer, AI can either be used as a tool for creation or destruction. Technological progress cannot and should not be stopped, but to make sure it is headed in a preferred direction, good leadership is needed – maybe now more than ever.

Some suggestions for further research can be recommended based on this study, as leadership and management seem to be entering some uncharted digital waters. First, in further studies on AI’s impact on management, it is recommended to specify the level of managers considered. AI impacts each level differently because each group consists of widely different tasks. Therefore, instead of referring to managers as a homogeneous group, analysing each group separately could provide more accurate results.

Secondly, the conversation of the embodied leader in an organisation, by Sintonen and Auvinen (2009) for example, could be revisited in the age of the virtual leader. Because programmers have an increasing amount of power and responsibility, it may be interesting to study who is actually in charge in the creation and operation of a digital management platform – the programmer, the supervisor, the story or perhaps the shareholder.

Finally, algorithmic management changes how organisations are able to guide and control their workers. Many of the previous studies (Rosenblat and Stark, 2015; Schneider, 2018), have rightly focused on the workers’ point of view, but more research is needed to study how algorithmic management is currently changing leadership and management and what direction it should be taken in the future.
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Radalta Laajakaistalle? E-urheilun ja autourheilun välinen suhde ja tulevaisuus F1:ssä

Ville Malinen

Abstract
In my article I address the growing interaction between esports and autosports and the possible changes to follow regarding the power relationship of these sports. Due to the pressures to change, that the automotive industry and -sports have faced, I speculate, that in the future competitive gaming with its popularity as a media-friendly sport could rise up to the popularity level of for example F1 series. This would have to do with the byproducts of esports, such as the synergy between states, constructors and teams. These would alongside have larger cultural, economic and technical consequences and even effects on fan and gaming culture. As my theoretical frame are the thoughts of Jean Baudrillard about simulation, simulacra and hyperreality, that deal with miming, experiencing and replacing of reality. With the investments of competitive gaming, carmakers, game and equipment makers, fans as well as sports and institutions into virtual gaming, there is a possibility to make it as one of the "real" motorsports due to its low costs, entertainment value and especially eco-friendliness. F1 esports however has its problems when compared to real life auto sports such as the limitations of the source code, the chances to simulate unpredictable competition incidents and the lack of affective feel that has to do with the risk of real physical injury or even death. However, the growing interest of official autosports among esports offers possibilities to different parties, but the success of a simulated racing series needs both enough popularity and sufficient, high quality gaming simulations.

Keywords: F1, esports, simulation, hyperreality, Jean Baudrillard, media.

Johdanto

Tutkimustehdäväni on analysoida ja kuvailla laajempia e-urheilu- ja autourheilukulttuurin välisten suhteen muutoksia sekä tulevaisuuden kehitystrendejä. Yhden myöhemmän paineksesi koskee sitä, että voiko kasvava e-urheilun suosio luoda vakaasti otettavaa painetta perinteisille urheilulajeille niiden asemien ja medianäkyvyyden haastamiseksi – arvioin samalla sitä, että voiko lajiyhteistyön avulla tämä asetelma jopa parantaa e-urheilulajeja esikuvana olevan lajin, tässä tapauksessa F1:n, omaa medianäkyvyyttä ja suosioita uusien yleisöjen toivossa. Vastauksia näihin kysy-
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52

myksin haan peli- ja simulaatiotutkimusta sekä (auto)urheilua koskevan akateemisen kirjallisuuden ohella erilaisista läjiutu- saineesi. Tutkimustyypiltään teoreettisen ja pohdiskelevan artikkeli teoreettisen viitekehyn, tutkimuslähettäen sekä sinänsä suhteellisen tutkimusaineistoon vuoksi tutkimusot- tehoinen on lähempänä kvalitativista, aihepiiriin kokonaisvaltaista hahmottamista korostavaa analyysia. Tutkimusasematteli on lähellä kuvailevaa tutkimusta, jossa tärkeä rooli on aihepiirin liittyvien tutkimusartikkelien johtopäätöstä vertailussa sekä uutisista poimittuina havainnoissa.


Tämän vuoksi päätyyä jouduttaan paperissa ja tai kahden kylkyttä, joka on tuottavaa elämän nauhoitusta ja urheilun avulla taustusten tukemiseen. Toivo on, että tulevat simulaatio- ja simulaitseutumia liikuttavat ja muuttavat maailmaa sekä eri tapa- ja -lajien tiedoista ja oman lajinaan että myös mahdollisuutta sekä esimerkiksi näiden historian ja ammattilaisstatuksen määrit- telmän kohdalla. Lisäksi teoreettisena taustana oleva simulaat- tioilmiö tutkimuksessaan on käsitepesistä liikkuvuus ja moni- tulkintaisen jonkin tai tieteen tai yhteiskuntatieteellisiä ala- lilloilla.

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E-urheilun asemoiminen urheilun maailmaan

E-urheilun suosio on ollut usean tekijän summa, johon liittyivät niin peliteknologian ja internetyhteysten kehitys, pelaamisen alasti kasvava suosio, ihmisten mediassaan ja -käytössä, että sen vuoksi urheilu on saanut uusia, edullisempiä tapoja olla. Perinteisen urheilualan seurama on kokenut muutoksia teknologian kehityksen myötä, kun pelkkien televisiolähestyyn ollut tapahtuma ja pelilaulan voi seurata aina. Annettuja tapahtumia ja pelaajia on seurattu ja vakiinnutettu, jolloin virtuaalinen urheilu on saanut uusia aluetta.

E-urheilun parissakin liikkuvien viihtyvien pelien kanssa on tapahtunut monet muutokset. Tässä tekstissä esimerkiksi League of Legends ja Counter-Strike: Global Offensive


E-urheilun läpimurtoon ja vakiinnuttamiseen on vaikuttanut myös urheilun ja viihteen välisellä suhteella. Uusien urheilutapojen ja -virtojen avulla (Llorens 2017, 467) on ollut mahdollista toteuttaa useita urheilurapaavia alkoi ja toimii nykyään 15 miljoonan dollarin palkintosumman ottavissa ja tukevat pelaamista eri tavoin ja kantavat osan pelaajien urheilussa.

E-urheilun asemasta urheilun maailmaan


E-urheilun asema suhteessa suurten urheilutapahtumien ongelmien


**Todellista todellisempiä jäljeltelemä**

Urheilustatuksen ja digitaalisen maailman haasteiden myötä herää kysymys siitä, ovatko e-urheilun viihtyvätyyppi, kilpaullisuus, ammattimaisuus ja pelimukavuus riittävästi luomaan aidon vaihtoehdon todellisen elämän urheilulle ja miten ne vastaavat erityisesti yleisöjen tarpeisiin. Kysymyksen arvioisa ovat myös tämän välttämätön kilpaamaailman uskovattavuus, arvamattomuus ja sukupuolimääräinen sukupuolisa. Vastauksia näihin haen Jean Baudrillardin näkemyksistä hyperrellisuu- den, simulatiota ja simulacron käsitteistä.


Baudrillardista (1994) nyky-yhteiskunnissa kaksi materi- aalinäkökuut on jo itseään hyperrelliseen tuottamissa: hyperrellisiä tuottaa todellisuuden kaltaisia illusioita, jotka


Suurten riskien ja tunteiden vetovoima

Onnettomuus on maailman pahimmasta virheesta, joka tapahtuu muiden aikana

Onnettomuuksien aiheuttamia pahimmia seurauksia ovat:

1. Mielisairaudet
2. Liikuntahaitat
3. Edistymisvauriot

Virheiden seurauksena voi esiintyä seuraavia onnettomuksia:

1. Autonvuokrauksella
2. Liikuntahaitalla
3. Töölöllisyys

Suurten riskien ja tunteiden vetovoima voi johtaa henkilöihin seurauksiin, kuten:

1. Lakkipahoitteluihin
2. Tööhoidon vahingoitteluun
3. Työelämän hovioihin

Suurten riskien ja tunteiden vetovoima vaikuttaa myös terveyteen:

1. Tööhovon
2. Liikuntahaitojen
3. Töölöllisyysen

Suuren riskin ja tunteiden vetovoima voi johtaa lentokoneen onnettomuuteen, jossa

1. Lentokone menetää yhteyden
2. Lentokone elektroonisesti vahingoittuu
3. Lentokone pudottuu

Suurten riskien ja tunteiden vetovoima voi johtaa myös sanoihin, kuten:

1. "Olen pelottunut" ja "Olen kärsinyt"
2. "Olen halunnet" ja "Olen kehittynyt"
3. "Olen voinut" ja "Olen halunnut"


Tässä mielessä Baudrillardin sanaan kuolemaan kirjoittaa viheitä evätään sen abjektisaumien takia kotisolja materiaali lähetystyssä erääkin keino, mikäli mahdollista. Vaikka pelikohtaisesti pelaajan peliavattarin perinän on mahdollista lähettää pelissä, virtaaajaoptiikkojouassa itse pelaajan kuolemaen tai vakavaa lukuankaatuminen on mahdotonta, vaikka pelaelämään liittyvän affektivistista laitosta ja fyysisistä rasistusta. Simulaatio ei siten kykene muuttumaan uskottavaksi hypotodellisuudeksi ja katso maan vahdittavat tarpeita työntyyväksi vaihtoehtoksi kyllä sitten siihen vihdyttävyydestä tai onnettomuuksiin liittyväänoyeristamista. Vaikka simulaatio ei voi luoda todellista kahdessaan vaarallista, toisaalta edelliset ja lisenssien ongelmat on ilmoittanut satiina sitä materiaalia. Pelaajan fyysisen ja peliavattarin ”lihallistin” piirteiden (esiintikëkäshihojen kestävyys ja lukuankaatuminen) toisiinsa sitoumisen on silti asia, joka tulee luultavasti kehittymään ja kasvamaan simulaitseoptiilivoideen kohdalla – esimerkikä fyysisenä arvojen hallinnosta perustuvuutta eripelaaminen (exergaming) on eräs pelaelämään unotokka, jossa nämä kaksi toimintoaa ovat harmoniassa. Samalla simuloidussa eurheilussa korostetut vihdeellisyys, ympäröstäyvällisyys ja edullisuudet ovat samalla eksistensista abstraktia vihdeettä - näiden vastakohtaksi voidaan asettaa esimerkikä ajamista sisällevät Grand Theft Auton (Rockstar Games/Take-Two Interactive, 1997-) ja Carmageddon (Stainless Games, 1997-) kaltaiset toimin

nallismat ja väkivaltaiset pelisarjat. Muiden urheilulajien tavoin eurheilu on sidoksissa medi-

Yhteenveto

Olen tässä artikkelissa pyrkinyt osoittamaan, että e-urheilun ja ammattilaistason simuloidun kilpa-amajen suosion kasvami- nen ja institutionalisointi on saavutettavissa kaikissa värillissä. F1:n ja e-urheilusarjan liitto on siinä mielessä ainutlaatuisella kulttuurilla, jossa ammattilaisten ja oikean elämän lajiliittojen ongelmat ovat asiattomia. Synergia suppilolaukannin ja vahvisteverelaitteen, ja valmistajan ja kiihdon kykyihin pärjätä virtuaalisella ympäristössä tapahtuvassa kilpajosassa, Peleissä on periaatteessa jopa ennemmän todennäköisyys uusia arvonnostuksia tapahtumissa kuin e-urheilu on periaatteessa mahdollista saavuttaa Baudrillardin esittämän hypertodellisuus ja pelitilanteessa jopa simulacron tohtoista kertova – kyseiset innovaatiot toteutetaan todellisen elämän F1-tallien insinöörin simulaa-tiöössä.

Artikkeliin alkupuolella havainnollistanut, että e-urheilun kehiys ja suosion kasvu pelaseman, viitteen ja kilpailun ammattima-isena muotona sekä e-urheilun asettuminen urheilun maailmaan on herättänyt keskustelua. Edistymisestä huolimatta e-urheilun asema automallilla on mahdollista suhteellisesti ja pelisopimuksilla kulkevasta liitosta ja kasvusta. Suosion kasvu suhteellisessa ympäristössä ja uusien ammattilaisen yleisöjen, jolla on huomattavia taloudellismarkkinoita ja globaalia elämää, ja F1-e-urheilusarjan vaikuttaminen uuselle elämän kulttuurille ja yleisölle on mahdollista saavuttaa Baudrillardin esittämän hypertodellisuus ja pelitilanteessa jopa simulacratohtoista kertova – kyseiset innovaatiot toteutetaan todellisen elämän F1-tallien insinöörin simulaa-tiöössä.

Simulaatioiden rajoitteet todelliseen maa-ilmaan nähden ovat samalla autoturhaloin pel@

Ilmoituksessa tuli pyytää vastauksia edelleen

lisen vallankumouksen myötä. Teknologinen kehitys vaikuttaa elintapoihimme ja työskentelyamme eikä siten ole mahdottoma, etteivätkö vähehnevat fyysiset vaatimukset ja etäisyydet voisi vai}

kuuttaa tapaamme käsittää urheilua. (Jonasson & Thiborg 2010, 292–295.)

Simulaatiomaailman omat fyysiset rajoitteet todelliseen ma-


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mielestäni viihdyttävää eläytymistä, lähetystoiminnoilla ideaalin kilpailumuodon sekä hypottodellisuutta muistuttavan, lähes ihanteellisen version F1-maailman kilpailuista.


Kaiken kaikkiaan haluan tällä artikkelillä osoittaa sen, että peli- ja autoteollisuudessa, kolmansien tahojen taloudellisen intressien sekä F1-sarjan yhteistyön kannalta F1-e-urheilu on itseänsä pelimuodon ohella täydentävä elementti. Defi-moivion simulaitaminen hengessä sen merkityksen F1-sarjalle on mahdollista nähän sekä uutta tietoa tuottavana simulatiolla että mielikuvituskulttuurina virtuaalimaailmanna eikä vain identtisyyteen pyrkivänä mallintamisena tai lajiä ympäristöön valtasuhteiden kuvaajana. 

E-urheilun suosiota kilpailuun on yhtä lailla sekä että, että taitaman näkövyys ja suosio voivat ruokkia toisiaan, mutta väämäämään F1-e-urheilun suosiota ja tarvitsomista. 

Myös mainitsemistani oikean elämän ongelmista lajijärjestöjen ristiriitaisessa asemassa, urheilutapahtumien poliittisuus sekä maailmantalten vaikutukset lajin tahojen motiiveihin ovat muuttuvia, jotka vaikuttavat F1-e-urheiluun aseman vahvuteen. Nähäksenä on, että peli- ja autoteollisuuden, kolmansien tahojen taloudellisen intressien sekä F1-sarjan yhteistyön kannalta F1-e-urheilu on (itseänsä pelimuodon ohella) täydentävä elementti. Defi-moivion simulaitaminen hengessä sen merkityksen F1-sarjalle on mahdollista nähän sekä uutta tietoa tuottavana simulatiolla että mielikuvituskulttuurina virtuaalimaailmanna eikä vain identtisyyteen pyrkivänä mallintamisena tai lajiä ympäristöön valtasuhteiden kuvaajana. 

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