

Games, Game Studios and Clusters

On the Sharing of Information Within the Game Cluster Dutch Game Garden

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Abstract

In this thesis I aim to answer the question which institutional aspects of game development companies hinder or improve the sharing of information within the cluster Dutch Game Garden. In order to answer this question I used the method of grounded theory, conducting semi-structured interviews with the game development companies *GainPlay Studio*, *Active Cues*, *Sneaky Mammoth*, and *Abbey Games*. These interviews were based on the literature review and structured with the help of Linda Argote and Ella Miron-Spektor's framework for organizational learning, as well as concepts from the field of institutional theory. This has led to the following findings. All companies use a flexible development process, generally don't work with sanction, and grant their employees open access to information within the company. This in combination with the openness and informal atmosphere present in all interviewees' companies, as well as the informal and friendly atmosphere within the clusters itself create a suitable environment for the exchange of information. Helping each other out in terms of sharing experiences and providing small services to one another seems to already happen on an informal level, usually in the form of impromptu, informal meetings. The only aspects which can potentially hinder the sharing of information within the cluster are the limitations to the specificity of information being shared, introduced by non-disclosure agreement (NdA) which companies have to sign for their clients, and the notion that sharing information can also be a hindrance. This hindrance is either perceived by the companies in the form of reduced short-term revenues as the result of time spend on interacting with other companies, or in the form of disrupting the creative process as the result of the informal and ad hoc nature of these interactions.

Keywords

Game Development, Institutions, Institutional Theory, Organizations, Cluster, Exchange of Information, Organizational Learning.

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Introduction

The purpose of this thesis is to address the question what institutional aspects of game developing companies improve or hinder the sharing of information within the cluster Dutch Game Garden. This question is based on the current situation of the Dutch game industry. The Dutch game industry can be described as being both fully in development and offering much potential, but also as being very volatile at the same time. Research into the Dutch game industry conducted by the Dutch Game Monitor (DGM) in 2015 suggests that although the total number of game developing companies has grown steadily over the past five years, many of these companies end up going bankrupt within half a year due to various problems, amongst which the lack of visibility, unrealistic goals, and general inexperience. What's more, out of the total number of game development students, only 5% of them ends up actually finding a job within this industry.¹ In response to these figures, the DGM formulated several recommendations, amongst others the advice to set up collaborations to pool resources and expertise, but above all to maintain realistic goals with the current context of the industry in mind. An arguably viable way to achieve the recommendation of collaborating with other companies, is through a cluster of game developing companies.

A cluster can offer many opportunities for collaboration due to the inherent spatial proximity of companies with similar goals yet with complementary expertise. Aside from being a practical solution to tackle financial problems through the pooling of resources, creative clusters are often described as being a catalyst for both innovation as well as collaborations on a creative level.² This makes clustering companies not only effective from a financial point of view, but can also improve the results of the creative output. An often named merit of a cluster is furthermore the ability to facilitate collective learning, as the spatial nearness and potential emotional connection as the result of this can allow for more effective distribution and creation of knowledge.³ Recently, there has been an increase in interest by various knowledge institutions and network organizations such as ClickNL in researching the effects of clusters on the creative production.⁴ However, these attempts mainly focus on interdisciplinary collaborations and their effects on value creation throughout the entire Dutch creative industries, rather than the on the Dutch game industry in particular. This lack of specific academic attention would justify further research.

The most well known cluster in the Netherlands specifically aimed at facilitating companies within the game industry is the cluster Dutch Game Garden.⁵ This cluster provides over 70 starting game developing companies with accommodations, as well as providing them with a platform for collective learning with the help of the Incubator Program. Arguably, this cluster would provide the same benefits which are usually ascribed to creative clusters, including the ability to facilitate collective learning, not only in a formal way as initiated through the cluster itself, but also due to the geographical nearness of the companies. In order to find out which factors might hinder the process of collective learning within the cluster, I will research which institutional aspects of the game developing companies either improve or hinder the sharing of information within the cluster Dutch Game Garden.

1 Dutch Game Garden (2016) *Games Monitor: The Netherlands 2015*.

<http://www.dutchgamegarden.nl/news/nieuwsdetail/the-games-monitor-2015-the-full-report-284/> (01-09-16).

2 Hartley, J. et al. (2013) *Key Concepts in Creative Industries*. London: SAGE: p. 17.

3 Arikan, A. (2009) *Interfirm Knowledge Exchange and Knowledge Creation Capabilities of Clusters*.
<http://www.jstor.org/stable/27760030> (06-07-17).

4 ClickNL (2017) *Opgave Creatieve Industrie*.

https://assets.contentful.com/h0msiyds6poj/1zeWpdHgfkOW8CSqiEYKo/64c303ff574fc2a015644d38e322bec4/Opgave_creatieve_industrie.pdf (01-06-17).

5 Dutch Game Garden (2017) *What We Do*. <http://www.dutchgamegarden.nl/about/what-we-do/> (01-09-16).

Objects of Analysis

The main object of research will be the game developers from the cluster Dutch Game Garden (DGG). Dutch Game Garden seeks to facilitate the growth of games in the Netherlands, and one of the services which they offer is providing game developers with office space to start their studio. This has led to several clusters of game developing companies located throughout the Netherlands. Although it are mainly startup companies who can profit from this arrangement, there are also more experienced companies located in these hubs. One could argue that because of this clustering of game developers, mutual collaboration in the form of exchanging contacts and networks, talent, and expertise would be easier. Because of this, the cluster Dutch Game Garden (DGG) would be a suitable object of analysis due to their established position within the Dutch game industry. In order to frame this research in terms of size and relevance, four experienced game developing companies will be analyzed for this thesis. These are game development studios *GainPlay Studio*, *Active Cues*, *Sneaky Mammoth*, and *Abbey Games*. Being successful for several years and thus arguably having a relatively long lifespan in the context of the Dutch game industry, analyzing the characteristics of these development companies would lead to more accurate results than analyzing recent start-ups. Since starting game development companies have less experience in terms of working within the cluster, they are thus less suitable for analyzing the relation between the sharing of information and institutional aspects of development studios, due to their inexperienced and shifting organizational structure.

Relevance

The relevance of this topic is that it can contribute to the survivability of startup companies within the Dutch game industry. Many of the new game development companies crash at an early stage, and the figures provided by the DGM indicate that the industry is quite unforgiving despite the overall growth.⁶ Especially within a cluster of similar companies there is a concentration of experience and knowledge. Being able to profit from the knowledge of experienced companies might mean the difference between the success or the failure of a startup company. For this reason it is important to stimulate the exchange of information and experience between the companies within the cluster, as this can lead to a potentially beneficial situation for everyone. The knowledge which characteristics of Dutch game development companies promote or hinder the sharing of information would therefore provide a useful foundation for additional research, providing handholds which can serve as starting points. On top of this, since this research focusses on the various companies within the cluster Dutch Game Garden, it can provide the cluster DGG with potential avenues to further explore in order to optimize their policy in order to mitigate the aspects which hinder the sharing of information, as well as to further promote the aspects which improve the sharing of information.

In order to answer the research question which institutional aspects of game developing companies improve or hinder the sharing of information within the cluster Dutch Game Garden, the relation between game production, clusters, and collective learning needs to be researched. In the next section I will review the discourses surrounding these topics in order to explain this specific formulation of the research question and in order to start creating a theoretical framework to answer the main research question of this paper.

Status Quaestionis

Games & Serious Games

The first field which my research is related to is the field of game studies. In terms of academic attention, there is a fair body of work on the game industry and the game development process in

6 Dutch Game Garden (2016) *Games Monitor: The Netherlands 2015*.
<http://www.dutchgamegarden.nl/news/nieuwsdetail/the-games-monitor-2015-the-full-report-284/> (01-09-16).

general, a recent example being the book *The Game Production Handbook* by Heather Chandler.⁷ However, most of the debates within the field of game studies are related to the design aspects of games, and not necessarily to the context of the production process of a game developing company, nor to the effects which the specific setup of a company has within the context of a cluster. There are however sources which analyze the relation between the formal aspects of computer games and the related production processes.

Games are almost inherently the result of a collaboration between multiple creators from different disciplines, rather than being the result of one person's effort. The text *Get Organized at Work!* by Sjenja van der Graaf on the development processes in relation to the specific workplace setups of a company illustrates this.⁸ Van der Graaf analyses two game developing companies as case studies, which each adopt a different workplace setup which leads to different production processes. This distinction which van der Graaf makes between a cabal and a studio how the combination of different creative processes can lead to a whole different production process, and can prove useful for arguing how a cluster might influence or compliment the different production processes of individual game development companies, depending on their workplace setup.

The aspect of collaboration between different disciplines is even more visible when it comes to the production process of serious or applied games. While trying to define applied or serious games, it seems there is the consensus that all these games can be grouped under the shared goal of education, according to Ritterfeld et al. in their book *Classifying Serious Games*, as well as the collection of papers of the serious games conference of 2015.⁹ This common denominator of education can further be divided into games with the aim of learning, games which aim to transfer an ideological message thus creating a change in social or political discourses, games which seek to provide the player with occupational related skills and knowledge, games with the goal of improving health through behavioral change, and games which are used for their persuasive character in marketing and advertisement situations.¹⁰ What all these different types of serious games have in common are the applied aspects to them; serious games are used with a different goal in mind than merely entertainment. This means that games like these are inherently interdisciplinary of nature, not only requiring the collaboration between different art disciplines, but also different fields.

This distinction is relevant, since the nature of a game determines a large part of the production process. This production process in turn determines the structure and processes in which knowledge get embedded within an organization, as well as shaping the processes through which knowledge can be shared between different companies within a cluster. Unfortunately there seems to be little to no literature on the specific relation between particular characteristics of the production processes of both entertainment games or serious games and processes of collective learning within a cluster. The idea of collective learning however is often being noted as being a potential result of the clustering of companies.

Cluster & Collaborations

A creative cluster is generally defined as a geographically proximate group of interconnected companies and associated institutions in a specific field, based on commonalities and

7 Chandler, H. (2014) *The Game Production Handbook*. Hingham: Charles River Media.

8 Van der Graaf, S. (2012) *Get Organized at Work! A Look Inside the Game Design Process of Valve and Linden Lab*. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2178464 (12-09-15): 480-488.

9 Göbel, S. et al. (eds.). (2015) *Serious Games: First Joint International Conference*. <http://www.springer.com/gp/book/9783319191256> (10-05-2016): p. XIII-XV.

10 Ritterfeld, U. Cody, M. and Vorderer, P. (2009) *Serious Games: Mechanisms and Effects*. London: Routledge: p. 10-20.

complementarities.¹¹ The concept of a cluster was first mentioned by the economist Alfred Marshall in *The Principles of Economics* and was later introduced into the policy mainstream by Michael Porter in *The Competitive Advantage of Nations*.¹² Yet in the book *Key Concepts in Creative Industries*, John Hartley et al. argue how the increased importance of the creative cluster as a concept has only been a relatively recent development within the field of the cultural and media industries, its development mainly taking place in the first decade of the twenty-first century, where it was often connected to issues of regional development.

While looking at the historical background of clustering in the cultural industries as a field, David Hesmondhalgh describes in *Change and Continuity in the Cultural Industries: Ownership, Structure and Size* how merges and large acquisitions were an ongoing trend starting from the 80's, exploding even more in the 90's and once again in the mid-2000's. During this period there was a shift from an initial trend towards increasing levels of synergy, which was later viewed as a failure due to the high level of uncertainty in the cultural industries. Despite this, conglomeration is nonetheless an ongoing process within the creative industries according to Hesmondhalgh. This means that smaller companies are vulnerable to the strategies of larger corporations, and increasingly exist in relation of interdependence with these larger companies.¹³ While looking specifically at the Dutch gaming industry, somewhat similar dynamics can be observed as well; with a few international giants being the main companies, whereas the rest of the field is comprised of a multitude of small companies, usually consisting of only a handful of employees.¹⁴ Yet this shift away from synergy does not seem to be the case, as the bolstering of strength and knowledge between game development companies of different sizes is still happening to some extent, the cluster Dutch Game Garden being an example of this.¹⁵

Collective & Organizational Learning

This seems to affirm the claim of Hartley et al. that one of the main attractive quality of clusters are the benefits of co-location to businesses which compete in similar markets but cooperating in the development of similar knowledge, linked to the idea of networks and “collective learning”.¹⁶ Clusters as a foundation for collective learning can therefore be an important aid for starting game developing companies. A recurring problem within the Dutch game industry is that due to the high levels of competition and the relatively low threshold for entering the industry, many starting game companies end up closing down.¹⁷ Learning from the experience of others and preventing avoidable mistakes can be life-saving in such a volatile industry, making collective learning an arguably welcome addition. There has been substantial academic attention to the topic of collective learning, mostly in the field of management sciences and sociology, approaching the topic of collective learning with either a focus on learning processes within clusters, or with a focus on learning processes within individual organizations.

Collective learning within clusters is often described as being caused by spillover knowledge sharing between similar companies within the same cluster, as the result of geographical nearness. A recent framework for analyzing collective learning within clusters is proposed by Andaç Arikan

11 Hartley, J. et al. (2013) *Key Concepts in Creative Industries*. London: SAGE: p. 17.

12 Marshall, A. (1980) *The Principles of Economics*. Philadelphia, PA: Porcupine. and Porter, M. (1990) *The Competitive Advantage of Nations*. New York: Free Press.

13 Hesmondhalgh, D. (2013) “Change and Continuity in the Cultural Industries: Ownership, Structure and Size”, in: Hesmondhalgh, D. (2013) *The Cultural Industries*. London: SAGE: p. 187-213.

14 Dutch Game Garden (2016) *Games Monitor: The Netherlands 2015*.

<http://www.dutchgamegarden.nl/news/nieuwsdetail/the-games-monitor-2015-the-full-report-284/> (01-09-16).

15 Dutch Game Garden (2017) *What We Do*. <http://www.dutchgamegarden.nl/about/what-we-do/> (01-09-16).

16 Hartley, J. et al. (2013): p. 17.

17 Dutch Game Garden (2016) *Games Monitor: The Netherlands 2015*.

<http://www.dutchgamegarden.nl/news/nieuwsdetail/the-games-monitor-2015-the-full-report-284/> (01-09-16).

in *Interfirm Knowledge Exchange and the Knowledge Creation Capability of Clusters*.¹⁸ Albeit this author underpins the importance of the social aspects in these processes, it seems to be the case that this framework does not in fact connect all aspects together, instead laying an emphasis on the regulatory aspects over the social and personal aspects of a knowledge exchange within a cluster. Since the exchange of information within a cluster is nevertheless done through social interaction, these social and personal elements can play an important role as well, and should thus be taken into consideration.

In order to take all these aspects into consideration, the topic of organizational learning can potentially be a more valid approach to gaining a grip on the relation between clusters, collective learning and characteristics of game development companies. After all, the practices of sharing information are embedded within the specific characteristics of the organizations participating in the exchange. These characteristics facilitate, prohibit or otherwise influence the specific flows of information to and from the organization. The characteristics of organizations furthermore influence how these flows of information are processed through the regulatory aspects of the organization, and how they can be influenced by the normative dimensions, as well as the more personal cultural-cognitive dimensions of the organizations. Therefore, starting an analysis of the collective learning processes within a cluster by looking at the organizational learning processes within individual companies within a cluster might be a more fruitful approach.

An influential overview of learning processes taking place specifically within an organization is the article *Organizational Learning: The Contributing Processes and the Literatures* by George Huber.¹⁹ Even though there have been many additions to the body of literature on this topic, this paper nevertheless has had a major impact on the debate regarding organizational learning and is still being referenced to as an important source within the academic discourse. The paper examines four constructs related to the process of organizational learning: (1) the process of acquiring knowledge, (2) how this knowledge is distributed through the organization, (3) the process of interpreting this information and finally (4) how information is stored within an organization. These four processes are discussed within the paper, mentioning the current state of the debate regarding each topic at that time, as well as containing suggestions regarding the gaps in the academic literature.

Albeit this was an important framework as well as an overview of all the literature on organizational learning with much impact, it has also received much critique over the past decades, the main point of critique being voiced by Mary Crossan et al. in *An Organizational Learning Framework*, arguing that albeit this model shows the different potential aspects of organizational learning, it does not in fact show how each of these aspects interact with one another, how they overlap or how they are dependent on one another. Nor does this model provide any handholds how to analyze these connections.²⁰ Over time there have been many attempts to construct frameworks for organizational learning like this, focussing on multiple perspectives.

Approaching this topic from a different perspective, Neharika Vohra and Nobin Thomas in *Investigating Organizational Learning Through Social Network Analysis: The Case of a Consultancy Firm in India* make use of Social Network Analysis (SNA) in an attempt to analyze both the formal forms of organizational learning as well as the informal versions of learning which

18 Arikan, A. (2009) *Interfirm Knowledge Exchange and Knowledge Creation Capabilities of Clusters*. <http://www.jstor.org/stable/27760030> (06-07-17): p. 658-659.

19 Huber, G. (1991) *Organizational Learning: The Contributing Processes and the Literatures*. <http://www.jstor.org/stable/2634941> (01-05-17).

20 Crossan, M. et al. (1999) *An Organizational Learning Framework: From Intuition to Institution*. <http://www.jstor.org/stable/259140> (01-05-17): p. 5220523.

happens in between individuals or within groups of individuals within the context of an organization.²¹ By viewing individuals as nodes within a network of actants which exchange knowledge with one another, Vohra and Thomas are able to analyze which type of information flows to which actor. However, what this approach lacks is the ability to analyze the tacit or unspoken elements which influence the flow of information within an organization.²² Although SNA is able to show the formal ties between the nodes in the explicit processes of exchanging and generating new information, the tacit processes often remain largely invisible with the use of quantitative methods as applied in the study of Vohra and Thomas.

The most inclusive and relatively recent attempt to include all processes into the analysis as well is the framework proposed by Linda Argote and Ella Miron-Spektor in their paper *Organizational Learning: From Experience to Knowledge*.²³ This framework takes both the organization but also its context into consideration, arguing how an organization has an active context, consisting out of the members, its material and immaterial tools, and the tasks performed. The active context is where the organizational learning happens, as well as the place where knowledge and experience get embedded into the organization. The latent context of an organization are all its underlying principles which influence these three core components. Finally, there is the environmental context, which are all the factors which influence the organization, but are not within the organization itself. This framework can be used to further analyze both the aspects within the organizations which can embed knowledge, as well as how this organizational context interacts with the environmental context, thus allowing knowledge gained through the sharing of information to be embedded within the organization.

Summary

What we see from this literature review is that on the one hand, previous academic research has shown that clusters can be beneficial for collaborations in a multitude of ways, the major one being collective learning. There is a sufficient number of theories regarding the topics of collective learning, as well as theories to analyze these processes within the context of a cluster. However, in regards to the connection between collective learning, clusters and game development companies in particular, there seems to be a lack in academic attention. This means that although it can be argued that a cluster of game development companies can have the same benefits ascribed to other creative clusters, additional research is needed in order to make any solid claims regarding this hypothesis.

In regards of this point, a cluster can simultaneously be the source of tension, especially in the case of Dutch Game Garden since all the members of this cluster aim for the same goal, which is selling games, in turn making the others competitors. This is even more the case when a game developing company is relatively new to the field, and has yet to prove itself, since the amount of contenders is high, and the rates of failure is even higher because of this. This means that certain aspects of companies can in fact also hinder this process of collective learning. The awareness of these factors can form the foundation of a grounded approach in either mitigating these aspects, stimulating or supplementing these aspects. This means that in order to maximize the benefits which a cluster can offer in terms of collective learning, it is thus necessary to identify which aspects of organizations can improve and which aspects do in fact hinder this process. In the next section of this paper, I will explain the theoretical framework which I will adopt in order to answer this research question.

21 Vohra, N. & Thomas, N. (2016) *Investigating Organizational Learning Through Social Network Analysis/ The Case of a Consultancy Firm in India*. <http://onlinelibrary.wiley.com/doi/10.1002/tie.21777/abstract> (21-04-17): p. 587-588.

22 Vohra, N. & Thomas, N. (2016): p. 597-598.

23 Argote, L. & Miron-Spektor, E. (2011) *Organizational Learning: From Experience to Knowledge*. <http://pubsonline.informs.org/doi/abs/10.1287/orsc.1100.0621> (02-05-17).

Chapter 1: Theoretical Framework

1.1.- Introduction

The main research question of this thesis is what aspects of game development companies improve or hinder the sharing of information within a cluster. Although collective learning can be much broader than exchanging information, focussing on collective learning will also introduce the difficulty of defining this process, touching upon a much broader discourse on learning processes, hence problematizing the exact definition of collective learning. Rather than going deeper into this debate on the exact definition of collective learning, I will purposefully avoid this and instead focus on the sharing of information, a more concrete version of collective learning. The sharing of information is after all a more direct approach to learning, and arguably large portion of the process since the simple exchange of ideas is often the first step in the process of collective learning.²⁴

In order to answer this research question, I will adopt a theoretical framework which draws upon sources from institutional theory as well as theories from the topics of collective and organizational learning. As we have seen there seems to be a lack of academic sources which discuss the relation between the production process of games and serious games or the characteristics of game development companies on the one hand, and the processes of collective learning within a cluster on the other hand. Institutional theory will provide me with handholds with which it becomes possible to analyze the processes and characteristics of individual organizations, whereas the theories on organizational learning will help me to argue how these characteristics and interactions might improve or potentially hinder the sharing of information. In order to answer my main research question, it is therefore prudent to first define and operationalize the terms institutions, institutional logics, and organizational learning, as well as connecting these three concepts. In the next section I will describe the theoretical framework of my paper by defining these concepts and linking them together.

1.2.- Theories & Concepts

1.2.1: Institutional Theory

The concept “institutions” can have a multiplicity of meanings, often overlapping or relying on connotations and assumptions from previous definitions in order to function, making it hard to come to a conclusive definition of what an institution is. In his book *Institutions and Organizations: Ideas and Interests* Richard Scott gives a brief overview of the history of the term as seen from various perspectives, including the economical, political and sociological perspectives.²⁵ What each of these perspectives have in common is that they underscore that in the broadest sense, “institutions are comprised of regulative, normative and cultural-cognitive elements that, together with associated activities and resources, provide stability and meaning to social life”.²⁶ By viewing organizations as institutional forms, as well as being influenced by wider institutions, it becomes possible to analyze the motivations underlying the actions of organizations or collectives of organizations.

Although there is no real consensus when it comes to analyzing institutions, all theories from the various disciplines do in a sense agree that institutions consist out of three “pillars” which approach institutions from a different perspective, each field attributing more significance to one or two pillars over the other ones. Scott describes the first one of these pillars as the regulative pillar, or the written rules and restrictive aspects of an institution. Although all scholars underscore the regulative

24 Van den Bossche, P. et al. (2006) *Social and Cognitive Factors Driving Teamwork in Collaborative Learning Environments*. <http://journals.sagepub.com/doi/pdf/10.1177/1046496406292938> (06-07-17): 514-515.

25 Scott, R. (2008) *Institutions and Organizations: Ideas and Interests*. Third Edition. London, Los Angeles: SAGE: p. 3-16.

26 Scott, R. (2008): p. 47-49.

aspects of an institution to some extent, this pillar is more likely to find support amongst historians and economic historians, who will view organizations to be resting primarily on this regulatory pillar. Although this pillar seems to connote repression through formally written rules and laws, or informal mores, many regulations do at the same time enable social action by conferring special licenses or powers to actors within the organization, thus empowering them by affording them action. In this sense an institution can both restrain but at the same time empower social behavior within an organization. As seen from this perspective, an organization is a stable system of formal and informal rules backed by surveillance and sanctioning power that is accompanied by feelings of fear/guilt or innocence/incorruptibility.²⁷

The second pillar is described as the normative pillar which approach institutions as resting primarily on both the norms and values present within an organization.²⁸ Values here are conceptions of the preferred or desirables, combined with the construction of standards, along which behaviors and existing organizational structures can be reflected upon, compared and assessed. Norms are the implied assumptions of which means can be used to pursue valued ends. Similar to the regulative pillar, the normative pillar both empowers and constraints actions, albeit seen from a behavioral context since it restricts forms of social action, conferring both rights and responsibilities. In comparison to the regulative pillar which is mainly backed by economists and historic economists, the normative pillar is supported primarily by sociologists, who approach institutions as in the sense of kinship groups, social classes or systems of religious belief.

Thirdly, the cultural-cognitive pillar attributes primacy to the perspective of personal and cultural backgrounds present within an organization.²⁹ In the broadest sense, the cultural-cognitive elements of an organization are all the shared conceptions which constitute the social reality and frameworks through which meaning is created within an organization. What sets this apart from the other two pillars is that in order to understand and explain the actions taking place within an organization, it is not only necessary to look at the objective conditions and context of these actions, but also take the personal, subjective interpretation of the actor into consideration as well. This in turn takes both the taken-for-granted cultural frameworks as well as the affective aspects of an actor into consideration.

For my own analysis, I will be using the perspectives of all three pillars in order to generate a complete image of institutions as being influenced by the various interrelated factors stemming from all three pillars. Although this model can be thought of as being inclusive it also introduces problems regarding the assumptions underlying each pillar. Yet because of this particular case study, all three pillars seem to play a distinct role within an game development company as an organization with a specific context. Like any legally recognized company within the Netherlands, game developers are also both empowered and bound by legislation and written rules within their organizations, meaning that regulative aspects of an organization will impact their actions. Yet because of the nature of these companies – often being small-scale, horizontally organized companies, where all employees most likely have a tight bond – normative elements will also play an important role, as the survival of the company is directly retraceable to the actions of its limited members, creating social pressure both in terms of economic responsibilities as well as in emotional responsibility. Because of this, cultural-cognitive aspects play a role as well, since one's personal emotional and cultural background can influence the interactions with other members of the company, as well as with members of other companies within the cluster.

Using institutional theory as a part of my framework will allow me to argue how a cluster as an

27 Scott, R. (2008): p. 54.

28 Scott, R. (2008): p. 54-56.

29 Scott, R. (2008): p. 56-60.

institution creates, performs and influences behavior. At the same time it allows for the analysis of the relation between different organizations during a collaboration, more specifically the elements which might be in tension with certain aspects within the organizations as institutions. In order to connect this to processes of learning within an organization, I will use the framework proposed by Linda Argote and Ella Miron-Spektor. The advantage of using this framework is that it allows me to analyze both the learning processes within an organization, but also how this process is influenced by external factors – in this case the institutional aspects of the cluster or other organizations which are part of the collaboration. Therefore it allows me to argue how the learning processes embedded within the organizations facilitate certain types of interactions in terms of exchanging knowledge, and hence it allows me to argue which institutional aspects influence these interactions.

1.2.2: Organizational Learning

Linda Argote and Ella Miron-Spektor provide a framework for approaching organizational learning.³⁰ Unfortunately there is no consensus on what the exact conclusive definition of organizational learning is, yet one of the common grounds regarding the definition is that it involves a change in the organization as the result of the organization acquires experience over time. A general definition of organizational learning could therefore be referred to as the change in an organization's knowledge that occurs as an effect of experience. These changes in knowledge are visible in changes in cognitions or behavior, including both explicit and tacit components, embedded in a variety of repositories such as individual members of the organization, routines and also transactive memory systems of the organization. Knowledge in this definition includes the sense of a stock but also knowing in the sense of a process.³¹ Although there is little consensus on what to count as “knowledge”, I will adopt Argote and Miron-Spektor's interpretation of knowledge as being embedded within practices and routines. Changes in these practices and routines are therefore reflective of changes in an organization's knowledge, thus being arguably indicative for the occurrence of organizational learning. This has the advantage that it can also include the changes to tacit conventions as well as the changes to the explicit conventions into the analysis of organizational learning.

Within the framework, organizational learning is a process which occurs over time, depicted in Argote and Miron-Spektor's framework as a cycle (Image 1). During this cycle, task performance experience is converted into knowledge, changes the organization's structure with it, and in turn affecting the future process of gaining experience. Experience is defined by Argote and Miron-Spektor as the “cumulative number of tasks performed”. The exact definition of the word “tasks” is dependent on the field in which the organization operates. The experience in turn interacts with the context to create knowledge. There are different types of context, acting on different levels, namely the environmental context, and the organizational context. The environmental context includes elements which are located outside the boundaries of an organization, such as their competitors or clients. The organizational context can be subdivided into an active context and a latent context. The active context refers to the way in which its core components, the members, tools and tasks, interact with one another. The latent context refers to the underlying aspects of the active context, such as recurring norms and values within an organization. Within the active context the three components, the members, the tools and the tasks, can have different relations to one-another, and are the both the means through which organizational learning occurs, and also determine how knowledge is/can be embedded within the organization. Therefore, learning is both embedded within the different contexts of the organization, but this context is in turn also changed

30 Argote, L. & Miron-Spektor, E. (2011) *Organizational Learning: From Experience to Knowledge*. <http://pubsonline.informs.org/doi/abs/10.1287/orsc.1100.0621> (02-05-17).

31 Argote, L. & Miron-Spektor, E. (2011): p. 1124-1125.

once learning has occurred and new knowledge gets embedded within the organization. Knowledge here can be defined as being either declarative knowledge, or “know-what”, or procedural knowledge, or “know-how”. Finally, this learning cycle can take place on different levels of the organization, either in individuals, groups, organizational, or interorganizational.

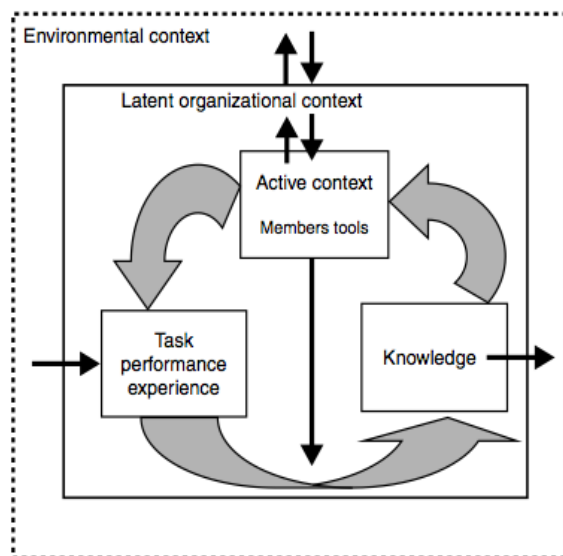


Image 1: The cycle of gaining experience within an organization.

This particular framework has the advantage that it allows me to analyze the institutional aspects of individual game developing companies, as well as allowing me to analyzing these in relation to other companies within the cluster. By providing the tools to argue how the specific setup of each company provides certain conditions for the exchange of information between companies within the context of the cluster DGG, this framework allows for a more inclusive analysis, not only taking the regulative aspects into consideration but also including the normative and cultural-cognitive aspects of each layer/context into the analysis. Although Linda Argote and Ella Miron-Spektor's definitions of the three contexts are rather open – the environmental context for example can be stretched out as broadly as one would like – it also makes this framework easily adaptable to the various case studies of game developing companies, and allows this framework to be complimented by more specific sources. In the next section I will describe several theories and concepts which I can use to expand upon this model in order to connect it to my specific case study.

1.2.3: Inter-organizational learning

Keeping Argote and Miron-Spektor's framework in thought, there seems to be a gap in the description of possible connections between the tasks performed and the members of the organization in terms of outcomes of procedures. Although there is no academic literature on the specific case study of game developing companies, the paper *Learning To Collaborate Through Collaboration* by Michael Howard et al. does describe the effects of a collaboration between expert and novice firms, in terms of creating novel efficient procedures.

Michael Howard et al. argue how collaboration of a novice firm with another more experienced firm can be a fruitful endeavor, focussing on novice technology firms who often lack organizational routines.³² He claims that “By observing routines of an alliance partner that has particular expertise in inter-organizational collaborative innovation, and practicing these over the course of the alliance, a novice firm can subsequently deploy similar routines for its own independent and internal

32 Howard, M. et al. (2015) *Learning To Collaborate Through Collaboration: How Allying With Expert Firms Influences Collaborative Innovation Within Novice Firms*.
<http://onlinelibrary.wiley.com/doi/10.1002/smj.2424/abstract> (21-04-17).

innovative pursuits”.³³ From this train of thought collaboration between expert firms and novice firms can thus be helpful from both parties' perspectives: the established firm gets to expand its network and gets access to novice technology which it might later on adapt as it's own, and the novice company gets the chance of acquiring specific organizational routines.

Routines are “flows of connected ideas, actions and outcomes”.³⁴ the dynamic, collective patterns of behavior, and form the foundation of organizational capabilities. These incorporate multiple perspectives and interpretations of individuals within organizations, allowing them to solve the challenges of effectively replicating valuable routines while permitting innovation in applying them to new organizational goals. Yet learning from an alliance partner is hard, as it requires interaction between those who have expertise and those who do not, and the success of learning through collaboration depends on the nature of the engagement. The two important factors distinguished in this interaction are firstly trust (increasing flow of tacit information between the two, without the static of secrecy), and secondly the intensity of the collaboration (hands-on practice of the routines rather than just theoretical). These findings would indicate that inter-organizational collaboration would thus have a positive effect on the organizational learning process due to the mutual influencing of the contexts of both interior and exterior to the organization. This change to the cycle of procedure experience occurs mainly in terms of the relations between individuals, as well as the relationships between individuals and tools in order to tackle the tasks. The observations and theories used by Michael Howard can therefore be useful in analyzing the current forms of exchanging information between the companies in the cluster DGG.

1.2.4: Individual – Tool Learning

In order to gain more grip on the relations between the various individuals within an organization and the tools/procedures used to tackle the tasks, the paper *Organizational Learning Mechanisms and Creative Climate* can offer handholds for this. Stefano Cirella et al. provide a definition of organizational learning as well, though in this paper the definition is operationalized specifically in order to analyze mechanisms within an organization, and with a different final goal in mind, which is to enhance the creative climate within the organization.³⁵ According to Cirella et al. organizational learning can be divided into three types of mechanisms, namely cognitive mechanisms, structural mechanisms, and finally procedural mechanisms. By looking at the framework of Argote and Miron-Spektor, this operationalized definition of organizational learning focusses toward the relations between individual members or groups within the organization, as well as the relation between members and the tools within the organization.

By drawing on prior research by Lipshitz, Popper & Oz, Cirella et al. define learning mechanisms as “institutionalized arrangements that allow organizations to systematically collect, analyze, store, retrieve, and use information that is relevant to the performance of the organization and its members”.³⁶ The capacity to learn is crucial; through the process of creating new knowledge from prior knowledge, behavior within an organization may change, members can respond to the changing environment and it can enhance performance overall. In order to analyze the process of organizational learning, there are three collective learning mechanics identified by Cirella et al., namely (1) procedural mechanisms, (2) structural mechanisms and (3) cognitive mechanisms.

33 Howard, M. et al (2015): p. 2093.

34 Howard, M. et al. (2015): p. 2093-2094.

35 Cirella, S. et al. (2016) *Organizational Learning Mechanisms and Creative Climate: Insights from an Italian Fashion Design Company*. <http://onlinelibrary.wiley.com/getIdentityKey?redirectTo=http%3A%2F%2Fonlinelibrary.wiley.com%2Fdoi%2F10.1111%2Fcaim.12161%2Fabstract%3FwollURL%3D%2Fdoi%2F10.1111%2Fcaim.12161%2Fabstract&userIp=77.249.165.127&doi=10.1111%2Fcaim.12161> (21-04-17): p. 211-213.

36 Cirella, S. et al. (2016): p. 211-213.

Cognitive mechanisms mainly relate to the non physical, mental processes which can support learning within an organization. Cognitive mechanisms according to Cirella et al. provide the language, concepts, symbols, theories, frameworks and values for thinking, reasoning and understanding learning issues that are consistent with the organization's strategy. They furthermore refer to Oliver and Jacobs by adapting the definition of cognitive mechanisms as being dialogue-intensive processes as a means to share mental models and create a common language within teams to encourage learning.³⁷ Structural mechanisms are the physical infrastructure within an organization which actively promote learning. These can take the form of colleagues, but also databases as well as physical meeting spots. These mechanisms enable the collaboration and debate required for the collective learning of new practices to take place, according to Chaharbaghi and Cripps.³⁸ In particular, structural mechanisms encourage virtual contact between members, stimulating the collective development of new insights or providing access to useful documents. In addition, the organization's physical structure may promote learning, by assisting spontaneous contact between members of different units and allowing knowledge to be exchanged. Finally, the procedural mechanisms include the "rules, routines, methods and tools that can be institutionalized within the organization to promote and support learning (Pavlovsky, Forslin & Reinhardt, 2001). Scanning the literature, 'democratic dialogues' (Gustavsen, 2001), work-based dialogue (Bjerlov & Docherty, 2006) and debriefing procedures (Lipshitz, Popper & Friedman, 2002) are examples of the methods that have been applied successfully, allowing participants to learn systematically from each other's experience through reflection and by encoding new knowledge in new procedures".³⁹ All these mechanisms help to concretize the framework provided by Argote and Miron-Spektor, and aid in providing solid examples of what to look for while analyzing the learning processes within organizations, as well as being compatible with the proposed framework for organizational learning.

1.2.5: Organizational Learning & Hindering Factors

Another addition to the theoretical framework will be the paper by Edward Anderson and Kyle Lewis on organizational learning in combination with disruptive elements.⁴⁰ When it comes to the organizational aspects which might disrupt the cycle of gaining experience, Anderson and Lewis have proposed a dynamic model in their paper *A Dynamic Model of Individual and Collective Learning Amidst Disruption*, with which they analyze the impact of disruptive elements on organizational learning, seen from both the individual level as well as the collective level. Anderson and Lewis describe the goal of their research as being twofold. The first is to examine various factors which are thought to either facilitate or disrupt learning processes within an organization, individual, collective or both. In examining these effects of the factors on short- and long-term performance, Anderson and Lewis aim to offer a model with which can be argued how cumulative knowledge helps or harms organizations. Secondly, they seek to affirm the perspectives of a particular branch of management sciences on organizational learning, approaching learning within an organization with a focus on transactive memory systems (TMSs). Albeit most research on transactive memory systems is used to describe small groups of individuals, the theory itself analyzes the micro-processes within these groups, arguably making it a suitable theory to incorporate into an analysis of learning processes according to Anderson and Lewis.

According to TMS theory, groups inherently develop an implicit system over time which divides up the tasks and responsibilities according to the actual or perceived expertise. As experience is gradually gained over time within the company, each member will get a clearer picture of what is

37 Cirella, S. et al. (2016): p. 213.

38 Cirella, S. et al. (2016): p. 213-214.

39 Cirella, S. et al. (2016): p. 213.

40 Anderson, E. & Lewis, K. (2017) *A Dynamic Model of Individual and Collective Learning Amidst Disruption*. <http://pubsonline.informs.org/doi/abs/10.1287/orsc.2013.0854> (24-04-17).

expected of them and what can be expected of others, the picture of “who knows what” becoming more accurate. This accuracy in turn allows for more effective distribution of tasks and responsibilities, as well as providing more accurate foundation on what information to pass on to what member of the organization, in turn allowing for more effective storage of knowledge and increasing the overall learning within an organization. There are however many disruptive forms which can have a negative impact upon this, the ones mentioned in the article being (1) turnovers or reorganizations, (2) tasks and technological change, and finally (3) extreme events.⁴¹ Albeit major reorganizations are less likely to occur within the specific context of small startup game developing companies, the chance of technological change happening or adaptations of protocols during the first years after the founding of a company occurring seems realistic, since the game industry is dependent on both changes in hardware as well as software for its products, making this a relevant source.

The disruptive effects of these events can have different impact upon the company, both on the individual employees' knowledge as well as the collective knowledge of the company, each having a different outcome in terms of learning and productivity. Albeit a disruption of the individual knowledge can be harmful, it does not negatively impact the process of organizational learning as a whole, neither in the short-term nor in the long-term. However, disruptions to the collective knowledge can, albeit over a large timespan, create permanent damage to the organizations productivity, the results being similar to those of collective forgetting. These effects can range from forgetting shared social structures, vocabularies, routines or standard operating procedures.

Disruption to the collective knowledge furthermore can create what Anderson and Lewis describe as a “core rigidity” that hinders appropriate use of the specialized individual knowledge of the “experts” within the organization. Non-specialists will however be able to recover much more quickly and will have ultimately higher productivity during disruptive events. A final hypothesis of Anderson and Lewis' research is that a disruption to an individual's knowledge can in fact lead to a higher productivity, but only if this disruption is of the technological nature and of short duration. An example of this is the adaption of a new more efficient tool or technology, making some knowledge of an individual expert obsolete, yet over time increasing productivity of the company as a whole.

1.2.6: Frictions During Collaborations

As a final addition to the theoretical framework are theories regarding the friction during collaborations between organizations in general, as they can aid in providing handholds for analyzing institutional aspects of companies and their effect on the sharing of information within a cluster. There are many academic sources on the problematic aspects of collaboration, specifically when it comes to the friction introduced by differences between organizations, such as divergent goals or a difference in (unwritten) rules. Especially the concept of institutional logics is useful for analyzing the friction between different game developing companies within the cluster, as well as their partners from outside the cluster.

The term institutional logics is defined by Thornton and Ocasio as the “socially constructed, historical patterns of cultural symbols and material practices, including assumptions, values and beliefs, by which individuals and organizations provide meaning to their daily activity, organize time and space, and reproduce their lives and experience”.⁴² This concept can be useful for arguing how certain recurring norms or values within an organization can influence collaborations on different levels, both within the organizations themselves, during interactions between companies

41 Anderson, E. & Lewis, K. (2017): p. 363-364.

42 Thornton, P. et al. (2012) *The Institutional Logics Perspectives*. Oxford: Oxford University Press: p. 1-3.

from the same cluster, as well as their partners or clients outside the boundaries of the cluster.

Tensions between norms and values within a company itself can cause different type of friction during the creative process, as argued by Marya Besharov and Wendy Smith in their paper *Multiple Institutional Logics in Organizations: Explaining Their Varied Nature and Implications*.⁴³ Since game development is both a creative process but also an interdisciplinary venture, personal norms and values can potentially have a big impact on the development process. This makes the concept of institutional logics useful for analyzing the impact of recurring values, beliefs or assumptions within an organization.

Institutional logics can also play an important role in the interaction between different companies within the cluster. Chris Bilton writes specifically about the collaborations within the creative industries in his book *Management and Creativity*. Bilton describes how studies of the creative industries have become increasingly concerned with the geographical networks which connects creative organizations and individuals, since cultural production is seen as embedded in and made possible by specific geographical and historical contexts of networks”.⁴⁴ One of his claims are that horizontal networks do not necessarily happen between creative organizations directly or in a formalized way, but rather occur through social networks and “third spaces” such as bars, cafe's and so forth. Especially in this informal context, personal norms and values can play an important role as well, hence they should be taken into consideration.

Finally, institutional logics can have an influence on interactions and collaborations with clients or partners of game developers. Related to this is the topic of cross-sector alliances. This is relevant since games with an entertainment purpose but also serious or applied games use the medium of games to suit the needs of another field, such as healthcare. For this reason, it is likely that game development companies will have to collaborate with other fields in order to create a coherent final product. Although entertainment games are perhaps less interdisciplinary in this regard, the need to communicate and form partnerships in the case of commissions nevertheless remains within the game development sector. For this reason it can be useful to look into the different frictions which can occur during partnerships like these.

In the book *Strategic Alliance Management*, Tjemkes distinguishes three different cross-sector alliances: (1) university-industry partnerships, (2) public-private partnership, and (3) non-government organization (NGO)-business partnership.⁴⁵ Although these three forms of alliances are different from one another, as well as from business-to-business alliances in terms of objectives and organization characteristics, they share three common difficulties regarding their management which, if left unattended, could destabilize collaborations. The first problematic point is that friction can occur due to the different roles which these organizations fulfill in society, tying in with Thornton's arguments about conflicting institutional logics. The second problem is related to accountability regarding financial responsibility and the different requirements as resulting from different sectors. The third type of conflict can ensue from differences regarding intellectual

43 Besharov, M. & Smith, W. (2014) *Multiple Institutional Logics in Organizations: Explaining Their Varied Nature and Implications*.
https://www.researchgate.net/publication/270889221_Multiple_Institutional_Logics_in_Organizations_Explaining_Their_Varied_Nature_and_Implications?enrichId=rgreq-2ce880660db129525aeb77a44d392993-XXX&enrichSource=Y292ZXJQYWdlOzI3MDg4OTIyMTtBUzoyMTYzNjg5MzE3MDg5NDdAMTQyODU5Nzc4MTk1OA%3D%3D&el=1_x_2&_esc=publicationCoverPdf (05-02-17).

44 Bilton, C. (2007) *Management and Creativity*. UK: Blackwell Publishing: p. 45.

45 Tjemkes, B. et al. (2012) *Strategic Alliance Management*.
<http://ebookcentral.proquest.com.ru.idm.oclc.org/lib/ubnru-ebooks/reader.action?docID=957190> (05-02-17): p. 214-216.

property. Taking the interdisciplinary nature of game development into consideration, these potential points of friction should be kept in mind as well while analyzing the effect of certain institutional aspects of game developing companies.

1.3.- Conclusion

These theories can help me answer the research question which institutional factors within game developing companies can improve or hinder the sharing of information within a cluster. In order to analyze learning processes within game developing companies, the framework on organizational learning by Linda Argote and Ella Miron-Spektor allow me to analyze how the active context and latent context influence one another, and thus create certain conditions for the exchange of information to take place, which are in turn influenced by the broader environmental context of the cluster. Viewing these three layers of interaction – the active, latent and environmental organizational context – as consisting of and/or being influenced by different institutions can provide a useful framework to analyze which institutional factors, individual, organizational or inter-organizational, can improve the sharing of information, which aspects slow this process down, and how the cluster can potentially compliment/mitigate these aspects.

In order to make this framework compatible with my research question, I will be using the theories and concepts presented by Richard Scott on institutional theory. The division which Scott distinguishes between institutions as resting on the regulative pillar, normative pillar and cultural-cognitive pillar can prove useful for analyzing the processes of organizational learning as well as the sharing of information, as being influenced by aspects from these pillars. Regulative, normative, and cultural-cognitive aspects of institutions are related with organizational learning as they affect the cycle of gaining experience. The cycles of gaining experience, and thus organizational learning, is largely embedded within the social structures and personal relationships between the different members.

This influence of the institutional aspects on the cycle of gaining experience can happen in various ways. Different relations between the members of a gaming company can influence the way in which information is produced, as well as the way in which this information is shared. Regulative structures furthermore influence the way in which members can interact with tools, tasks as well as their relationship with other members. The relation between an organization's members makes the cultural-cognitive aspects important to analyze as well, since this can influence how information is interpreted and who is provided with what information. Normative aspects can furthermore influence the way in which the active and latent context relate to the context of everything outside the organization, for example through recurring institutional logics present within the cluster.

By seeing the game development companies as well as their external contexts as being (influenced by) institutions, we can analyze and argue how these institutional aspects can influence the cycle of gaining experience within each of the individual companies, and how this creates certain conditions for the sharing of information amongst one another within the context of the cluster Dutch Game Garden. Therefore we can use this theoretical framework to answer the question which institutional aspects of game developing companies hinder or improve the sharing of information within the cluster Dutch Game Garden.

Chapter 2: Methodology

2.1.- Method

In order to answer the research question which institutional factors either hinder or improve the sharing of information within the cluster Dutch Game Garden, I will make use of a qualitative research method grounded theory.⁴⁶ The question which institutional factors either contribute or hinder this process touch upon many different topics, which can be divided up into three different pillars according to institutional theory, namely the regulative aspects, normative aspects and cultural-cognitive aspects. In order to include these three different aspects into the analysis, I opted for the choice of using semi-structured interviews as a method to answer my research question. These interview questions are organized with the help of the theoretical framework, focussing on the model of Linda Argote and Ella Miron-Spektor on organizational learning, offering handholds to formulate questions regarding the companies' processes related to organizational learning. The topics of the interview questions are all based on the literature review as well as the theoretical framework, offering general directions to explore. However, most of these theories are general of nature, as there seems to be a gap in academic literature regarding the specific case of game development companies regarding organizational and collective learning, arguably making grounded theory a preferable approach. Therefore, allowing the interviewees to add directions and topics of importance themselves without too much interference of the interviewer would be prudent in order to compliment for this lack of academic literature on the subject. According to the scholar Nathan Hook, grounded theory can be a viable approach for researching game developing companies, since this initial lack of academic sources would be complimented with this approach, allowing for the construction of a foundation for answering the research question posed in this thesis.⁴⁷

The object of analysis are game development companies from the Dutch game industry platform Dutch Game Garden. These interview questions will be structured with the help of the model proposed by Linda Argote and Ella Miron-Spektor, as well as the theories on institutional theory proposed by Chris Bilton. After conducting a series of interview questions with game development companies from this cluster, I will code these interviews in order to find recurring patterns or topics of discussion regarding their organizational learning, as well as their experience with organizational learning or collective learning while being in the cluster.⁴⁸ From this, it becomes possible to highlight the recurring aspects of these companies and further flesh out these concepts with the help of additional academic theory in order to argue what institutional aspects either hinder or improve the sharing of information within the cluster.

2.2.- Sampling

In order to gather both relevant and representative data, the companies chosen for this interview were selected with various criteria in mind. These criteria can be summarized as firstly representativity, and secondly being exemplary. This research has the relevance that it can offer insight in the potential avenues a cluster can further explore in order to facilitate collective learning. Therefore it is necessary that the companies used as case studies do not deviate from the norm to such an extent that the unique institutional aspects can no longer be representative for other companies. Yet on the other hand there is the necessity to see which institutional aspects are

46 Creswell, J. (2013) *Research Design: Qualitative, Quantitative and Mixed Methods Approaches*. https://www.google.nl/search?q=creswell+research+design&ie=utf-8&oe=utf-8&client=firefox-b-ab&gfe_rd=cr&ei=Wt6VWOCOOMrG8Af-0JfACQ (02-02-17): p. 234-236.

47 Hook, N. (2015) "Grounded Theory", in: Lankoski, P. & Björk S. (eds.). (2015) *Game Research Methods*. http://press.etc.cmu.edu/files/Game-Research-Methods_Lankoski-Bjork-et-al-web.pdf (12-09-15): p. 309-314.

48 Gibbs, G. & Taylor, C. (2010) *How and what to code*. http://onlineqda.hud.ac.uk/Intro_QDA/how_what_to_code.php (07-11-16).

beneficial for the sharing of information, meaning that the selection of case studies would arguably be more suited for this research's goal if the companies can be seen as being exemplary in terms of success in the gaming industry.

Yet in order to gain insight into the negative institutional aspects, it would arguably be more useful to pick startup companies rather than veteran companies for this purpose, since it are mostly the startups which cope with the most problems, which often lead to their bankruptcy. In this sense, it would be more interesting to analyze these companies in order to see what goes wrong, to which institutional aspects this can be retraced in terms of learning, in order to create a policy to prevent these mistakes in the future. However, in order to create an effective policy for this, it is necessary to know which aspects can potentially be beneficial as well. For this reason, analyzing veteran companies might be a more suitable first approach to this, as analyzing these companies offer a better indicator to both the beneficial aspects as well as the negative aspects, since these companies have survived for a longer period of time, and have thus accumulated experience, and changed their company setup accordingly. This experience and fleshed out company setup arguably makes them a better pick for this research.

In order for this research to thus be viable, the game companies *Abbey Games*, *Sneaky Mammoth*, *Gainplay Studios*, and *Active Cues* were chosen as the objects of research for this research. Since all these companies are fairly large in comparison to the situation of most companies as described by the Dutch Game Monitor, they can arguably be considered as an example to be strived for. These four companies have furthermore existed over the course of at least three years which can arguably be defined as a considerable lifespan within the context of the Dutch game industry, where the average lifespan of a game development company is generally half a year. This longevity allows for the analysis of which aspects have a positive or negative impact on the sharing of information more reliably.

The final reason for selecting these four companies is for their mixed cultural output in the form of both entertainment as well as serious games, making them somewhat representative of the complete scale of potential cultural products within a cluster of game development companies. In the stratum from entertainment games as one extreme, and serious games on the other end, all these game studios have a specific focus, ranging between these two ends. This arguably makes them more representative for the different companies a cluster of game developers might have to accommodate and support. The game studio *Abbey Games* tilt toward the end of entertainment, focussing almost solely on developing entertainment games, while *Sneaky Mammoth* is more of a hybrid company, hinging toward entertainment, but also accepting projects with an applied nature as well, their current project being their first serious game. *Gainplay Studio* and *Active Cues* both hinge toward the end of serious games, *Gainplay Studio* focussing on multiple games, whereas *Active Cues* mainly focusses their efforts onto one single product with many applications. Together, all of these companies encompass the range of potential companies which a cluster of game developing companies can house. These reasons would arguably make these case studies both representative in their diversity of products developed by these studios, while also being lead examples of successful studios, making their experience a valuable insight for this research.

2.3.- Reflections

The chosen research method fits the purpose of my research by allowing me to analyze all the different institutional aspects of organizations, both the regulative aspects, normative aspects and cultural-cognitive aspects. There are various different approaches that would be suitable for this purpose, yet gathering qualitative data in the form of interviews allow me to analyze both the regulative aspects of the company but most importantly the normative aspects in great detail.

Regulatory aspects can be analyzed effectively with the help of interviews. Although these rules can be analyzed in the form of a textual analysis or through an analysis of the company's business model as well, these written rules will always need to be executed by individual members of the company, in turn introducing the aspect of personal interpretation to these regulatory aspects. This can lead to a difference between the rules on paper in and the actual rules as they are being performed, as well as their influence on the daily practice within the company. This likelihood of individual interpretation and room for negotiation is even further enhanced by the fact that many of the game developing companies do in fact consist of very few members, which often having a tight bond with one another. Making use of interviews will thus allow for the analysis of the actual reality of these written rules, as well as their influence on the processes within the organization.

Interviews as a research tool furthermore allow for the best analysis of the normative dimension of organizations. Since norms are broadly shared within the company, taking an interview does not necessarily have a negative impact in terms of subjective preference while looking for specific recurring norms and values within the companies. Another benefit of using interviews to study the normative aspects of a company, is that it allows for the analysis of both spoken conventions, but tacit conventions as well, thus allowing for a more complete analysis. Albeit the normative conventions could also be analyzed with the help of ethnographic observation research as tools, this would introduce the risk of being unable to touch upon any of the tacit conventions, as well as their motivations. Many norms and values are after all internalized, and can thus be wrongfully interpret by the observer or even fully overlooked if one would rely on personal observations alone in this case. In this case, interview questions are thus preferable over the use of ethnographic observations.

This method would however arguably introduce tension when it comes to the goal of analyzing the cultural-cognitive aspects of the process of organizational learning, as this method would entail interviewing only one person per company. Since the cultural-cognitive aspects are inherently tied to individuals, this would introduce problems regarding the ability of one person to estimate the feelings and personal response of other individual members within the company, in turn introducing all the problematic aspects regarding hermeneutics. However, although this method would seem insufficient in fully analyzing the cultural-cognitive aspects in terms of emotional reactions toward certain situations, events or procedures within the company, the method of taking interviews would in fact be sufficient in analyzing the actual translation of these feelings into action, as these can be observed by and interpreted by the interviewee.

Despite being adequate in answering the research question posed, this research will have several limitations. While each of these case studies can offer valuable insights into the various game companies and their unique characteristics and with this, arguably the Dutch gaming industry as a whole as well, it is nevertheless difficult to make any hard claims regarding the universality of these unique cases. Each gaming company is different, and in order to remain competitive, many of these companies will change accordingly over time, potentially looking different in the future. This makes a claim to universality in regards to which institutional factors improve or hinder collective learning subject to change as well. However this specificity can nevertheless serve as a point of interest. Since these companies can be considered as being exemplary in that their structure and setup should be strived for. This means that they can nevertheless be used to sketch an image of a potential situation in which collective learning can function at its best, making an analysis of their institutional aspects a valuable contribution.

Chapter 3: Results

3.1.- Introduction

In the next chapters I will analyze the results of the four interviews conducted at the game development companies *GainPlay Studio*, *Active Cues*, *Sneaky Mammoth*, and *Abbey Games*, arguing which aspects of these companies can influence organizational learning, and ultimately how these aspects influence collective learning in the form of information exchange within the cluster of Dutch Game Garden. The results of these interviews will be structured with the help of the framework on organizational learning provided by Linda Argote and Ella Miron-Spektor as described in the text *Organizational Learning: From Experience to Knowledge*.

In this proposed model the authors argue that organizational learning occurs within different contexts, either directly related to the organization, or the contexts in which this organization is grounded. The layers which the authors distinguishes are the active context of the company itself, which consists out of the members of the organization, the tools used, and the tasks within the organization, and how these layers interact with one another. This active context is in turn influenced and shaped by the latent context, which are all the underlying aspects of the company which cannot directly act but which nevertheless influence the active context, for example through shared norms and values present within the company. Finally, there is the environmental context, which also influence the latent and active context of the organization. In the case of this research, the environmental context will mainly be related to the clients of the companies, as well as the other companies within the cluster Dutch Game Garden, and finally the cluster itself.

Each chapter will analyze an individual company to see which type of interaction in terms of exchanging information is being hindered or facilitated by their specific institutional aspects. These aspects have been distilled from the interview with the method of selective coding, and through the construction of a coding tree. Using the framework on organizational learning allows me to argue how knowledge can be embedded within the organizations, and with this, how the active, latent and environmental context play a role in the sharing of information within the cluster, by seeing how the institutional aspects of each layer interacts with one another. The results of each individual company will then be synthesized in the final chapter.

3.1.- Case Study I: *GainPlay Studio*

3.1.1: Introduction

A relatively older game development company is *Gainplay Studio*.⁴⁹ Their main focus is on the development of serious games with healthcare applications, basing their game design and applications on scientific evidence and research. Although this company is still relatively small in comparison to other industries, it has had much success ever since its founding in 2010, having produced at least 11 serious games. Being a somewhat stable company in comparison because of their success and thus having a somewhat developed company in terms of management and game development experience, it makes their company an interesting case study to analyze. By having ample of experience in developing games, their experience as a game development company can prove useful for analyzing which institutional aspects of their company have an influence on the collective learning processes in the form of exchanging information. In order to analyze which one of these aspects have an influence, I conducted an interview with Teun Aalbers, the business-developer and co-founder of *GainPlay Studio*. These aspects will be structured according to the layers of the active context, latent context and environmental context. I will argue which aspects of these three layers interact with one another and in turn influence the sharing of information within the cluster.

49 Gainplay Studio (2017) *Gainplay Studio: Bedrijf*. <http://www.gainplaystudio.com/company/?lang=nl> (28-03-2017).

3.1.2 Active Context

The active context of organizational learning consists out of the members, tools, and tasks performed, as well as their interaction.⁵⁰ These three components are the main means through which organizational learning occurs, determining how acquired knowledge is processed and embedded within the organization. Both the characteristics of these three individual components as well as their shifting interaction between one another shape and reshape the active context over time. When looking at these three components of the active context in the interview with Teun Aalbers, the topics of creative process, communication and the functions of the team were the most significant in terms of importance attributed to them during the interview, as well as being the recurring common denominators of the topics regarding the active context of *GainPlay Studio*.

Creative Process

In terms of immaterial tools such as processes, and their relation to the tasks, *GainPlay Studio* makes use of agile and scrum for their development process. The reason which Teun Aalbers gives for this is that it is compatible with the uncertainty usually inherent to a creative process. On the one hand, this can be a useful way of thinking and working according to Aalbers, since it allows for maintaining something of an overview of the creative process while at the same time allowing for much freedom and flexibility. It allows for a flexible planning and affords room for changes in direction, since the sprints, or iterative cycles, are usually two weeks each. This means that the creative process is largely left unrestricted by a rigid planning. This is both beneficial for the developers since this allows them to work without having to worry about too many set deadlines, as well as allowing some room for mistakes. The creative process is considered to be harder to gain a grip on, according to Aalbers, yet this method allows it to be made fitting. This method of working is also beneficial to the clients, since this method allows for constant supervision and modulation of the content should the need arise.

Yet at the same time, this method can also be somewhat restrictive for the process. Due to the target audience for their games, the clients of *GainPlay Studio* are almost exclusively healthcare organizations, the costs of each project are usually paid with subsidies. This has the result that at the start of the development process, once all the research has been conducted, a list of main features and functionalities has to be determined, which often results in obligations regarding the final version of the game. However, as experience has taught them, this mostly goes well, as this obligation doesn't mean that the entire process has to be time-boxed or thought out in detail for the entire duration of the project.

Despite this clear general outline of the production process, Teun Aalbers nevertheless mentions that their company is still in the process of learning to gain more grip on this creative process, himself included since he is the one who has to keep an eye on the process. A finding which they discovered over time is that it is a necessity to have someone who keeps an eye on the general process and direction of the project. The aim of this method is to time-box at least the main process, in order to keep an overview. In order to gain a grip, Aalbers describes how the final outcome of each step in the development process is often a confrontation between him – as the one being responsible for keeping track of the time limit and budget – and the game designer, who is the creative director. However, this is something positive, as Teun Aalbers playfully describes this confrontation a “battle” between him and the creative director. This allows for some structure and handholds, in turn not only providing a clearer defined direction to work with but also some peace of mind for everyone in the company. Albeit this way of working requires some insight in one's own limits, the general structure of the process allows for this learning to take place: it is flexible

50 Argote, L. & Miron-Spektor, E. (2011): p. 1124-1125.

enough to afford some mistakes to be made and mitigated for in the rest of the planning, therefore affording the members of the company the ability to learn from their mistakes over time.

Communication

According to Teun Aalbers, connecting the various creative processes of all seven members of the team is inherently connected to the communication within the company. Due to the use of scrum and agile methods, the creative process requires meticulous communication between all the members of the team in order to make everything fit together, as well as requiring adequate means in which information is stored within the company. Aalbers explained during the interview that these things happen through two things, the first one being the underlying mentality and normative dimension connected to the use of scrum and agile methods of planning, and the second one being the use of *Trello* as their main source of storing information, distributing information and tool for maintaining an overview during the process. Both these things facilitate the process of learning within the company through accumulated knowledge from previous experiences.

The choice to use of scrum and agile is related to its affordance to facilitate proper time management in combination with certain normative interpretations. The specific interpretation and adaptation of this method within the company entails that at the start of each sprint, a meeting is planned in which the plans and list of priorities are set for the coming two weeks – often the duration of a sprint. Albeit the type of priorities are defined by the three owners of *GainPlay Studio*, the exact schedule of these priorities are being determined by the member of the team who works on them. The reason for this is to give the creative process as much space and flexibility as possible, allowing the developers enough breathing space should the creative process be delayed or otherwise obstructed, which is often. The downside of this however, is that in order to be effective, the creative person has to be aware of their required time to complete the set priorities and features for a particular sprint. This is unfortunately hard to do, and can only be done based on the knowledge gained through previous experiences.

This in turn is related to a normative dimension, namely the mentality of reacting to mistakes. When asked if there are any sanctions, such as in the case when someone makes a wrong estimation of the required time he or she needs to complete a set feature, Teun Aalbers' response was that they don't even have the luxury of working with sanctions, nor do they think that this way of thinking is productive for the overall process. Rather, “fuck-ups” are being met with feedback, as Aalbers claims that from his experience the main reason for these mistakes are often the effect of a flaw in the communication. This is one of the reasons for using their current method of development, since the scrum and agile method allows for the mitigation of these mistakes, thus allowing the company and its members to learn from their mistakes over time, gradually getting better in time management. Teun Aalbers describes this as:

“A: how much time does that cost? And B: to give them insight into their own work process. That way, you notice that people gain more insight into their own work rhythm and process, and how this is related to the other specialisms of the other team members”.

In regards to fine tuning one's own creative process to the rest of the team, the personal level of insight into a member's own creative capacities seem to contain a somewhat normative dimension as well. Aalbers describes this as:

“What is most important [...] is that they realize what kind of consequences it has when they, just because they can, work an extra week longer than we originally agreed upon [...] and thus, realize what is ethical for the company”.

While talking about the benefits of adopting the scrum and agile methods in the quote above, Teun Aalbers does interestingly enough use the word “ethical” to describe a normative responsibility of a member to estimate the required time to finish a specific feature, connecting this responsibility to the existence of the company, indirectly suggesting that the survival of the company does need to be kept in mind while thinking out one's work rhythm. So, in this sense, each member is free to set their own work pace but there is a limit to this in the form of this normative dimension, preventing a member of the team to slack off.

Aside from this mixed regulative and normative dimension of estimating one's work rhythm in relation to the rest of the team, this aspect is also related to their use of *Trello* as the main way of distributing information between one another aside from face-to-face communication. *Trello* is a platform on the internet with which it is possible to maintain an overview of everyone's work process within the company. Teun Aalbers describes this medium as being useful for seeing everyone's progress during every sprint. He will use this information to estimate how much time the overall process will take, as well as setting out the big lines based on the overview, by seeing what tasks are being worked on and how much time is spent on one or multiple tasks. Furthermore, this platform affords not only him but also all of the other members of the company to see what the others are doing at any point in time. This creates a lot of transparency within the company, since everyone can see what the others are doing. It also allows for the gradual accumulation of experience over time, both on a personal level as well as on a management level, since the individual developers gain insight in their own productivity and Aalbers can make a better estimation of the process as a whole for each sprint.

Interim Conclusion

Analyzing this data, we could argue that the way in which the tasks, as well as the tools and members within the active context interact with one another, allow for organizational learning due to its flexible nature. Mistakes in the development process can be made without immediately having a negative consequence for the overall process, since this process is never planned further ahead than the two weeks of each sprint. This in combination with a lack of regulative sanctions as the result of making mistakes does further promote organizational learning, affording the employees of the company to gain experience over time. The use of *Trello* as the main way of storing and distributing information does furthermore improve the flow of information within the company, as everyone can potentially see what the other members of the team are working on.

This specific relationship between the members, tools and tasks can potentially improve the sharing of information within the cluster as well, since no one within the organization is bound by a tight schedule which prohibits other activities, and everyone has access to sufficient information at all time, potentially making the sharing of information easier. In the next section I will go over the aspects related to the latent context of the organization and argue how this influences the active context and the sharing of information within the cluster.

3.1.3: Latent Context

Linda Argote and Ella Miron-Spektor describe how, aside from the active context comprised of the concrete members, tools, and tasks performed, there is also the latent organizational context, which are all the underlying aspects.⁵¹ The difference with the active context is that the aspects of this context cannot act, but rather are underlying principles or assumptions which shape the active context. In other words an organization's latent context, such as its general culture or discourse cannot act on itself but nevertheless hold influence on how the active context is shaped and

51 Argote, L. & Miron-Spektor, E. (2011): p. 1125.

interpreted. While analyzing the interview on this level, the notion of hierarchy, as well as social cohesion were often named, and are important elements in the company's culture which determine the normative dimension of many of the processes from the active context. In the next section I will describe how these aspects were formulated by Teun Aalbers and argue how these influence the active context, as well as their effects on the sharing of information within the cluster.

Hierarchy

There are several ways in which hierarchy plays a role in its influence on the active context. Currently there are seven members in the team of *GainPlay Studio*, three being the original founders, including Teun Aalbers, with two members having a permanent contract, and two interns. When it comes to the hierarchy within the company, the original founders mainly set the strategic course of the company, and determine the big lines of every game. In this sense, there is a somewhat hierarchical structure within the company, since these decisions are non-democratic of nature. However, Teun Aalbers asserted that this was mainly because it is a necessity to effectively run the company: "Running the company is what us three do, but the creative part is something we all do". When it comes to the development process itself, everyone has a say. The interns generally participate more in terms of the actual production rather than in terms of the development of concepts, yet even the interns are considered to be fully fledged members of the team. Therefore he thinks that albeit there is something of a hierarchy within the company, it is in fact not experienced as such. Teun Aalbers describes how, "Since there are only seven of us, we are as flat as possible. [...] I think we are just way too small for that". This means that despite the regulative side of the hierarchy, the normative interpretation of this division of tasks is much different.

Social Cohesion

On top of this, there seems to be a rather cozy, informal atmosphere within the company, as well as the desire to maintain and even stimulate this atmosphere. Since there are only seven members in the team most of the time and since most of the work takes place in one office, there seems to be a rather informal, and friendly atmosphere within the company during the production process. Sayings from Teun Aalbers like "We are as flat as possible" and "[...] ah, you know, we are just too small for something like that" seem to indicate this. The original founders of the company furthermore seem to have a close bond with one another. When asked about this, Teun Aalbers describes how he and the original founders have known one another for at least 12 years by now, and the other two founders already know each other for over 16 years, dating back to their education at the HKU.

When it comes to the relationship between the other members of the team and the original founders, there seems to be an informal, somewhat friendly relationship as well. Prior to the necessity of hiring extra people for the company, social cohesion never seemed to have been an issue of attention, since this was just a given. On this topic, Teun Aalbers described how good social cohesion became an important goal to strive toward once the company started growing more. Aalbers describes this as following:

"Once we continued to grow as a company and reached seven employees rather than just us, we considered it as very important to improve the social cohesion within the team [...] we still try to make sure that they enter a 'warm bath' so to say".

This will to maintain a good atmosphere within the company has an impact on the active context of the organization as well, since this expresses itself into new non work-related activities such as lunching together, going on trips and going out together from time to time. This social cohesion and friendly environment can have a larger impact on the sharing of information as well. This

importance of the social dimension of teamwork related to the processes of learning is addressed by Piet van den Bossche et al. in their text *Social and Cognitive Factors Driving Teamwork in Collaborative Learning Environments*.⁵²

In this research, van den Bossche describes how a team is always more than a group of people in the same space, arguing that social processes within groups can significantly impact team performance. Bossche defines collaborative learning as the creation of mutually shared cognitions, on which the interpersonal context plays an important role on the team performance. Aspects such as interdependence, task cohesion, psychological safety and group potency turned out to be crucial for the engagement in team learning behavior in teams, which according to Bossche et al. leads to a higher perceived team effectiveness.⁵³ As Aalbers' descriptions seem to indicate, these last two aspects seem to be the case due to the social cohesion at *GainPlay Studio*.

Aalbers claims that this situation should be expected from a company like this. A pleasant workplace environment as the result of good social cohesion is – or at least should be, according to Aalbers – be a given within the serious game industry aimed at healthcare applications, as it seems fitting for this branch of the industry:

“We didn't want employees to just stare at their screens from nine till five. And I think we are in an industry which can be considered as a spill within the socio-societal sense, so I think you can expect different results in comparison to companies from other industries”.

Talking about their company as a “spill” within a socio-societal context indicates that their drive to contribute something is also partially present within their method of working. The fact that their games have applications within the healthcare sector does indeed suggest this. This seems to furthermore suggest that the members of *GainPlay Studio*, or at least Teun Aalbers and the other founders, want to contribute something to the industry itself, since they are keen to uphold a certain set of ideals within. At least they seem to care for the image which others have of not only them, but of the serious game industry as a whole, as indicated by these sayings.

Interim Conclusion

From this we can argue that the latent context, in the form of an informal, friendly atmosphere within the company seems to influence organizational learning by influencing the active context in a positive way. Since there is a friendly atmosphere combined with the current scrum and agile methods, the latter being heavily reliant on communication as a fundamental part to function, they both seem to enhance one another for the better. Once communication is halted by a strong hierarchy or sanctions, organizational learning would not be as effective since this would prevent the flow of information in the form of tacit conventions or face-to-face conversations. With the current requirement of communication for the current workplace setup to work, an informal atmosphere in fact seems to act as a catalyst to improve or stimulate learning within the company by means of promoting the flow of feedback and information.

This flow of information can arguably also be a good thing for the sharing of information between companies within the cluster, although this depends on the environmental context as well. However, based on the interaction between the active and the latent context, the open atmosphere in terms of social cohesion in combination with open access to information within the company as well as a flexible development process would arguably improve the exchange of information within a cluster

52 Van den Bossche, P. et al. (2006) *Social and Cognitive Factors Driving Teamwork in Collaborative Learning Environments*. <http://journals.sagepub.com/doi/pdf/10.1177/1046496406292938> (06-07-17).

53 Van den Bossche, P. et al. (2006): p. 514-515.

as well.

3.1.4: Environmental Context

The final part which can contribute to the organizational learning, but also the collective learning is the environmental context in which a company is situated. Argote and Miron-Spektor describe the environmental context as the layer which includes all the elements which are located outside the boundaries of an organization, such as competitors or clients.⁵⁴ In the case of this specific research, I will limit the environmental context to the companies or clients directly related to *GainPlay Studio*, as well as the cluster DGG, since the environmental context can be as broad as to include the entire international gaming industry. Within the layer of the environmental context, it are mainly the normative institutional aspects which are the result of interactions with other companies and clients with an influence on collective and organizational learning of *GainPlay Studio*. While analyzing the interview, these aspects can be summarized under the common denominators of communication with partners, relationships with companies from DGG, and the norms for sharing information, which I will discuss in the next section.

Communication with Clients

One of the strong suits of scrum and agile seems to be the ability to incorporate feedback from partners or clients into the process, which is why the communication with these groups are an important influence on the learning processes, mainly the ones within the organization itself. Unfortunately, this part of the communication is often a negative factor within the process, as there are many expectations from the clients' side being projected onto the gaming industry. These take the form of static of bumps within the communication which cannot really be anticipated. One of the more common misconceptions that clients tend to have when collaborating with *GainPlay Studio* are summarized by Teun Aalbers as the assumption that a game does not need intensive contact and consultation in order to be adequately created. When asked who usually takes the initiative to start these consultation meetings, Teun Aalbers explained how this is usually him, since this is part of his attempts to “educate” his clients into the requirements of game development for applied and serious games:

“Most of the time it's me who takes the initiative. Part of this is that we in try to 'educate' our clients in the fact that they have to invest time and effort into this as well. We aren't some magical beast which eventually poops out a fully finished game. It is still very common that people simply assume this. They think that everything will be just fine, but this is not the case at all”.

The forms which these miscommunications take, can range from small things like the expectation that one particular element of the user-interface would be green, rather than red, to the assumption that it is no problem to change the purpose of the game at the end of the development process, thus causing the entirety of the game mechanics to become obsolete. Unfortunately, this seems to be an inherent part of the development process.

Relationship Companies DGG

Aside from the seemingly inevitable bumps within the communication with clients, a factor from the environmental context which influences organizational learning, but also collective learning in the form of sharing information, is the normative relationship with other companies within the cluster DGG. When talking about the other companies within the cluster and their relations to *GainPlay Studio*, they are described by Teun Aalbers with the word “neighbors”; a term which in fact seem to carry both the literal, spatial aspect of the word to indicate the companies are located

⁵⁴ Argote, L. & Miron-Spektor, E. (2011): p. 1124-1126.

directly next to them, but which also seems to carry some of the emotional aspects with it. This is arguably the case since Aalbers describes the relationships with most other companies as downright friendly. The different levels of these relationships are often dependent on personal click, but also in terms of nature of these companies:

“ We interact more easily with people who are also focussed on developing applied games, because they are more similar in regards to the development process. But of course, this is also partially dependent on social preference, like you can imagine”.

This interestingly enough means that companies within the DGG do not in fact see each other as much as competitors as one would assume from the figures of the Dutch Game Monitor, which suggests that the business is extremely cutthroat. Instead it seems to be the case that there is even some sense of camaraderie between the companies within the serious game sector of the Dutch gaming industry, according to Teun Aalbers' description of his take on collaboration versus competition:

“Maybe the applied game industry is a bit different in this regard, but my personal vision is that in terms of potential, we have only just scratched the surface. We are still busy finding new ways to implement serious games, and thinking of ways in which we can introduce those in society, in such a way that we all profit from this [...] once all of that is done, then there is plenty of time to start being competitive towards each other”.

It furthermore seems to be the case that the DGG tries to stimulate a culture within the cluster of always keeping the doors open to one another, which seems to have worked out well. When asked if and how collaborations between the various companies of the DGG usually take shape, the answer was that these are almost exclusively of an informal nature. Teun Aalbers uses the words “ons kent ons cultuurtje” to describe the relationships during these collaborations, which furthermore seem to reinforce the conclusion that the relationships within the cluster are rather positive. This assumption was also confirmed when I asked how these collaborations usually start:

“Eh well...yea whenever I have a question I just walk in, and than i'm like 'Hey, I have this thing i'm wondering about. Let's grab a coffee and talk about that for a moment'. Most of the time those aren't formal appointments or something like that. The atmosphere is just way too informal for something like that”.

Sharing Information

This is very interesting to hear, since this informal atmosphere seems to positively impact the process of collective learning in the form of sharing information between one another. Sharing information between one another seems to be a common thing, and most importantly, there seems to be no limit to the type of information that Teun Aalbers is willing to share with other companies, and vice versa. When asked what type of information is not commonly shared, it turned out that sales figures are not often shared, though with the side note that this is not necessarily because companies are hesitant to share it, but more likely it just isn't that interesting to most. More interesting information is related to the question of how to manage a specific part of the process:

“Managing the process is what is more important [...] I mean, I know for one that those people are doing something which involves music, and I know that we are doing something which also involves music, and in that case, it is much more interesting to think about how to manage the process: learning how to negotiate, and when to use what type of meetings”.

This seems to indicate that companies have much to gain through collaboration, or at least in Teun Aalbers' opinion. Recalling his quote on collaboration versus competition, the focus on words like “together” or phrases like “so we can all profit from it” seem to further enhance the idea that the collective is indeed more important than individual gain within the cluster; a mentality which can potentially be a very significant catalyst for collective learning. When talking about collaboration between companies, the situation where one of the senior companies is coaching the newer ones, seems to be the case as well. In the case of *GainPlay Studio*, the development company *Active Cues* is actively trying to aid them in terms of managing the creative process. Aalbers describes the feelings towards this with a positive tone: “When it comes to managing a company we can still learn so damn much from those guys, and they are also trying to coach us, well, coach me in that”. This active support of veteran companies in combination with this open mentality can greatly improve collective learning as well through the sharing of knowledge.⁵⁵

3.1.5: Conclusion

Concluding from this, there are a few aspects of the company's active, latent and environmental contexts which influence organizational learning. Regarding organizational learning on the layer of the active context, the flexible, and open nature of the scrum and agile method allows for mistakes to be made, and aided by the informal, friendly atmosphere within the company, allows for communication and feedback to be effectively shared regarding these mistakes, offering the opportunities to learn from them in the future. The open communication combined with the open access to information overall improves the flow of information within the company. From the perspective of potential sharing of information, this openness in terms of regulatory aspects maximizes the channels through which an exchange of information might take place, since every member can potentially share their knowledge and experience with others.

Regarding the latent and environmental context of the company, it are mainly the normative dimensions which positively impact the organizational learning and the sharing of information as an extend of this. The aforementioned informal and friendly atmosphere within the company itself creates a mentality which improves the openness towards other companies, allowing information to be freely exchanged: Teun Aalbers describes how there isn't really any information or experiences from his company which he would rather not share with others, and the personal and somewhat shared normative mentality of striving for collective improvement over individual gain in terms of competition is arguably a powerful combination in terms of facilitating the goodwill and the means of sharing information within the cluster. Furthermore, this friendly and informal mentality seems to be matched by other companies within the cluster as well, making the cluster DGG a suitable place to exchange information between one another.

The only hindering factor that can be named here, is ironically enough, this same open mindset which is noticeable through the latent context and the environmental context. Albeit the scrum and agile method being very suitable for mitigating bumps and kinks in the development process, the open mindset present within the cluster in combination with the friendly relationships of companies amongst each other, can in fact result in many disturbances of the process due to unexpected conversations, requests or other types of collaborations. Although this mindset can in fact have a positive impact on the collective learning through direct sharing of knowledge, it can also disrupt the organizational learning within a company, since the creative process gets disrupted, arguably leading to a flawed learning process within the organization itself.

55 Howard, M. et al. (2015) *Learning To Collaborate Through Collaboration: How Allying With Expert Firms Influences Collaborative Innovation Within Novice Firms*.
<http://onlinelibrary.wiley.com/doi/10.1002/smj.2424/abstract> (21-04-17).

3.2.- Case Study II: *Active Cues*

3.2.1: Introduction

The serious game development company *Active Cues* can be considered as one of the veteran game developing companies within the Dutch game industry, having existed since 2015 and having experienced a rapid growth over the last years. In comparison to the rest of the serious game industry, this company can be considered quite large as well, having approximately 35 employees – whereas most companies consist of a handful of employees – and having an international audience as well. The field in which this company operates is almost exclusively the field of healthcare. Their unique product is called “De Tovertafel”, an interactive gaming table which serves as a medium for all their games and applications. Their games focus on a very specific, niche target audience, such as elderly people with dementia, people with a learning disability or children with autism. Because of its experience and size, this company is interesting to analyze for this research for its exemplary function within the gaming industry, since this experience can potentially prove useful for analyzing the result of an effective strategy in relation to organizational and collective learning over time. This interview was conducted with Mathijs Konings, co-founder, Director and head of Product Development at *Active Cues*. In the next sections I will analyze the different aspects of this company which Mathijs Konings highlighted during the interview, structured with the help of Linda Argote's and Ella Miron-Spektors framework on organizational learning.⁵⁶

3.2.2: Active Context

The active context consists of the basic components of every organization, namely the members within the organization, their material and immaterial tools, and the type of tasks performed within the company.⁵⁷ Regarding the components of the active context of *Active Cues*, there were several topics which were significant during the interview. These topics were the development process the team, their co-design principle related to this, the memory of the company or the means of saving and distributing information, and finally the regulative side of the task responsibility within the development process. In will go over these topics and their relation to the organizational learning processes of *Active Cues* in order to argue how these aspects influence the sharing of information within the cluster.

Development Process

In regards to the immaterial tools in the form of processes implemented within the company to tackle their tasks, it is interesting to see in how much detail the process within *Active Cues* are thought out and structured along certain principles, mainly regulatory aspects. Each step and component seemed to have a specific function, each member of each team and sub-team seemed to have a clear task, and almost all of it had academic foundations. When talking about the general development process, one of the first things which Mathijs Konings mentioned was the level of detail in which this process is thought out and structured, explaining that this is the company's most finished and thought out process:

“By now we have a very fleshed out production process. In fact, its the most intricate process of the whole company”.

This is visible through the structured approach as well as through the clear division of tasks within the company. The product development team consist out of several sub-teams, namely the developers, the designers, the artists, and the researcher, each having specific tasks and work rhythms, which need to be captured and fine tuned to one another into a coherent process. Albeit every project has its unique characteristics due to its niche target audience, Mathijs Konings

⁵⁶ Argote, L. & Miron-Spektor, E. (2011): p. 1124-1125.

⁵⁷ Argote, L. & Miron-Spektor, E. (2011): p. 1125-1127.

described how several general phases can be distinguished within the production process of every project, which are the research phase, the brainstorming, the process of developing a prototype, the testing of this prototype in the field, and the iterative process taking place after that to refine the game. Every project starts out with the research phase in which the specific target audience and their characteristics are analyzed in order to make a suitable game, after which the research team comes up with a set of theme's or topics which the game should include. This is then passed on to the rest of the game development team to brainstorm about potential versions of the game, which results in a prototype which is tested out within the field, after which the users' feedback is incorporated and the game is constantly changed in a series of iterative design processes until the final product is suited the best to the goal for it's target audience.

Co-design Principle

One specific part of the process which holds a central part within the overall production process is the co-design principle, which is used as a method to maximize the level of fine tuning of the final game for the specific audience of each project, in order to make it suitable. The definition of co-design which *Active Cues* attributes to this term is the usage of user-stories and feedback in order to improve their games. Mathijs Konings describes the method as being a process mainly takes form as play testing sessions of different prototypes on co-design locations – locations which are familiar with Tovertafel and which have agreed to let them test out the prototypes. This is usually done by the research team, which scouts for location like these, and visits the ones which are interested in helping to further improve the tovertafel:

“[...] and then we we test out the prototypes for about half an hour, and after that we talk with the people involved. What they've seen and what they thought about it. After that we utilize all that information in the next sprint. We try to interpret that information, connect user-stories to it so that we can think about new iterations”.

Konings explains that each iteration of the game has specific functionalities based on prior research into the target audience, which need to be tested in terms of reaction, in order to determine if these work or not. The experiences during these play test sessions and reactions to the current versions are documented in the form of video recordings as well as notes and observations made during the sessions, which are then send to the rest of the development team to start another cycle in the iterative process to make the game more suitable for the target audience. This does however introduce the difficulty of having different sub teams, each with creative processes which need to be adjusted to suit one another.

Team

In order to adequately connect these different creative processes and work rhythms of the employees of every sub team in each of the phases, the company uses scrum and agile methods of production, with sprints lasting approximately three weeks each time, with a retrospect meeting at the end of every sprint, in order to root out potential bumps for the next one. The reason for this is that it fits well with the iterative development process which seems characteristic for game development according to Konings, as well as offering enough flexibility due to the possibility of adding changes to the schedule. This method also seems to be something of a necessity within a company of this size as this makes it hard to improvise in an administrative sense of the word: “We've grown immensely. By now we have about thirty employees so from an administrative point of view, thats just one big misery”.

As the quote above indicates, this recent growth in the total number of employees does introduce challenges regarding the management of the creative process. In terms of production process, the

first challenge is that the company centralizes user-stories and feedback as a central component of their game, since this allows for better fine tuning to the target audience. It does however introduce the problem of having different teams working on different locations, for example to play test the prototypes and incorporate the feedback received during these moments. The main ways in which these difficulties are being countered are through the specific processes related to the company's memory, and through the particular definition of tasks and all the responsibilities which are attached to these.

Memory

When talking about the memory – the main way of storing and distributing information within the company – the previous quote of Mathijs Konings of the administrative process being “misery”, indicates that keeping an overview of all the different production processes going on during each sprint is key. One way in which they do this, is by trying to incorporate all of the project's information into one growing GoogleDoc project document, which incorporates all the combined information of the current project. Albeit there are different means of storing information, such as the previously mentioned video recordings and user-stories, these are usually redirected and incorporated into the document as well in order to keep everything consistently within one place and improve the transparency for everyone involved. This document serves as the connecting tool between the different teams and sub teams within the company, regarding the storage of information on the current project:

“Aside from this, every game has a separate documentation. That is a GoogleDocs which gradually gets expanded with additional information over time. All findings are documented in there. That way the document grows and gradually becomes more useful for the different divisions of the company, even the marketing department for example”.

He adds to this that every document of every game has to include several standard elements, which are a clear title, the goal of the game, a clear description of the game, the game mechanics and how they work, the results of the game, as well as the reactions of the target audience during the co-design sessions, and finally the different iterations and changes of the game over time. The power of this method is that it results in a single document which can be used by all the different teams. This is because the document's setup, which puts all the general information at the top, and the further down one goes, the more detailed parts are displayed, meaning that information should be easy to find, regardless of the team, since everyone within the organization works on it, and everyone has access to it at all times. This is the ideal situation anyway, as Mathijs Konings does add to this that the day-to-day practice of combining different types of information into one coherent whole always remains a challenge.

Tasks

Another method of reducing the difficulty of communication inside a relatively large organization with many intertwined creative processes, is by having a clear distribution of work in which each member interacts with a specific task within the company. Konings explains that the tasks which need to be performed within the company are expressed in the form of goals, operating on different orders of magnitude. The goals of every quarter of a year are often being translated into team priorities, for which one member of the team is appointed as the one who is responsible for these priorities. Responsibility in this context does not necessarily mean carrying the end responsibility for the completion of the task; it mainly means that this person is the one who is supposed to keep an overview of the entire project and is the one who manages the communication between the different members in the sub team. This person is also seen the expert on this particular part of the project since a person's personal expertise and affinity with the topic are the criteria with which the

person is selected.

Interim conclusion

Due to the size of this company there are a lot of regulative aspects which play a role in the organizational and collective learning through exchanging information. These effects are mostly visible through the structured, methodological way of approaching the development process, each phase being carefully thought out, with clear divisions of tasks, and the responsibility of communication being attributed to specific members of the teams and sub-teams, in order to keep an overview of everything. During the parts of the interview regarding the active context, words like “method”, “structure” and “phases” were often used, further enhancing the impression of a somewhat mathematically precise approach to the production process. This can arguably be very beneficial to the organizational learning processes, as this precision promotes transparency of the process, whereas the scrum and agile working method provides for the room to make mistakes and learn from them in the future. The size of the company in combination with its clear division of tasks does however mean that the acquired knowledge gets embedded within certain individual, rather than being clearly distributed amongst all members of the organization. However, due to the shared GoogleDocs' accessibility to every member, this does not create a barrier for organizational learning. Similar to the company *GainPlay Studio*, these aspects create the condition where information can potentially be shared with other companies through many different employees since everyone has access to the project related information.

3.2.3: Latent Context

There are however also many aspects of the latent context which also influence the organizational learning within the company by influencing and shaping the active context. In the specific case of *Active Cues*, the influence of the latent context is mainly visible in either the normative dimensions and interpretations which seem to unconsciously underly the active context, or the consciously stimulated normative aspects which serve to reinforce the more regulatory aspects of the active context. These express themselves in the interview through the topics of responsibility regarding the task completion and regarding the development process, the critical attitude toward these processes and searching for smart solutions to problems related to these processes, the hierarchical structure within the company, and finally the underlying assumptions regarding their method of tackling tasks.

Responsibility

One of the observations from the interview was that there is a very normative dimension connected to the completion of tasks. Mathijs Konings explains that, despite their positive experience in terms of working with their current methods, he does add that because of their company's size, this same method can simultaneously create a dependency on these structured processes to keep an overview and to keep everything running smoothly. With this in mind, he explains that so called “blind spots” within the process are the most dangerous occurrences. He defines these blind spots as pieces of the process which aren't supervised by anyone. This means that because the company has to rely on a structured approach, these blindspots can easily cause harm to the overall planning and schedule, since it creates misconceptions on who should work on what, resulting in a part of the process which members leave to others, wrongfully expecting it is not part of their contribution to the process:

“Whenever there is a piece of the project for which no one carries the responsibility, then that is a big red flag for us [...] whenever no one is the owner of a particular piece of the project, conflict will ensue, because the members of the team will expect things from each other which will just not happen”.

This results in the situation where there is a specific part which no one can check, and since no one is responsible, the problem won't be solved either. This danger has led to two forms of normative behavior being actively stimulated within the company. The first one is a critical attitude toward the process, and the second one is seeing individual members of the organization as owners of a part of the process. The critical attitude toward the process is explained by Konings as being a necessary responsibility since relying in on the process too much is dangerous:

“I argued how it is everyone's responsibility to look for gaps like these within the process. Parts for which no one seems to carry responsibility, and parts where things are therefore most likely to go wrong”.

The specific choice for the word “responsibility” rather than a word like “task” or “job” would suggest that this has more to do with norms and values rather than with an actual active task. Mathijs Konings continues to explain that because of the danger of trusting too much on the process, every member of the team should – in terms of responsibility – tend to one particular part of the process, using the word “owner” to define this responsibility. The word “owner” seems to not only be a formal definition of a connection between an individual and a task, but it also seems to be a loaded concept in terms of norms. Owner in this context seems to refer to the fact that each member has their very own piece of the project which they should consider to be theirs, with which they contribute to the whole; their own personal contribution to the project. This not only mitigates the danger of creating blind spots but also improves the personal connection of the team to the project, should this indeed be a shared value.

Smart Solutions

Another way in which the latent context can influence the members-tools relationship of the active context, is through the mentality of thinking in smart solutions.⁵⁸ Smart solutions are being described as ideas which not only offer a solution to a problem, but which are also future-proof, in the sense of being modular, as well as being able to grow over time. When talking about the retrospect meetings and how long these usually take, Mathijs Konings mentions how each of these meetings are dependent on how much there is to be discussed, but that he also tries to stimulate that members of the team reflect during the process itself. The terms “smart thinking” and “smart saving” were mentioned here as the means to once again counter the danger of creating blind spots. This leads to the situation where reflection on one's own work and the entirety of the project become part of an employee's responsibility:

“[...] I developed a format which serves as the criteria for each project plan. This is where it starts, but from that point on, it needs to be expanded and fine-tuned. There are several phases to this fine-tuning and we also reflect on those phases themselves during the process”.

Although this is more of a mentality rather than an active aspect of the company, it can nevertheless be of positive influence on the organizational learning process, as this mentality would challenge people to reflect upon their own work process, stimulating individual learning, which can potentially impact the processes as a whole within the company, should a blindspot be found. The assumption that each solution has the potential to grow can furthermore improve this, since this seems to suggest that ideas can be fluid and can change over time, allowing for the normative interpretation of mistakes or flaws as being indicators for better solutions. Should this result in any changes within the production process, the result can be considered as the result of organizational

58 Argote, L. & Miron-Spektor, E. (2011): p. 1127-1128.

learning embedded within one of the processes.

Hierarchy

Another part of the latent context which has an influence on the active context in terms of organizational learning is arguably the hierarchy within the company. When talking about hierarchy, Mathijs Konings mainly talked about this in relation to the responsibilities regarding communication, as well as the management structure within the company:

“Every team has a manager and those managers form the big MT, the big Management Team. There is a hierarchy in this structure: there is also a small MT, and there is also an executive team, which includes me. There are three people in that team. And finally there is the CEO. That's more or less the hierarchy”.

According to Konings, this hierarchy mainly plays a role in relation with communication. Konings describes how each of these layers in the vertical hierarchy have different responsibilities for keeping the overview of each part of the process, and managing the communication between the different team members for these parts. For example, the big MT usually has the responsibility of looking after the the quarterly, yearly, and four year goals of the company, whereas the appointed sub team managers have the responsibility of keeping an overview of their specific group and phase of the project. In this sense, the top of the management structure ultimately has the end responsibility of the project, as well as the responsibility for the overall communication within the process.

In terms of sharing information with one another, this hierarchy does not necessarily play much of a role, since there doesn't seem to be many normative boundaries which prevents the sharing of information between different vertical layers within the hierarchy. Albeit there is certain information which is not shared with the entire company for privacy reasons, such as the result of the yearly questionnaires regarding happiness within the company, or certain information regarding the clients or individuals of the target audience, almost any information is freely shared between the members of the company. When asked about his take on this, Mathijs Konings mentions that he himself tries to maintain a rather open policy regarding this:

“There is just so much information, so in that regard, you have to be careful not to overload people with information. Look, my personal policy in this is that, should anyone have a question, I will just give them a fair answer, unless the question is about seriously sensitive information or if this concerns private information of another co-worker, or something like that”.

The reason for this is so that there is a level of transparency within the company, which according to Konings, is beneficial to the sense of control which every member of the team has. This sense of control tends to afford people with the knowledge of where they can really contribute to the company, and how this is appreciated. Konings adds to this by saying that for this reason, albeit the hierarchy is still there, it is in no means an indicator that there is a difference in power between the members of the company, since everyone can in fact contribute to the total process, as well as the general lines of the company, should someone have suggestions for this:

“So yeah, the hierarchy is definitely there, but we try to give people plenty of space in terms of finding their own spot in the company. We also try to include everyone in thinking about the general direction of the company itself”.

In this sense, the hierarchy within this company seems to have more of a management function, rather than acting as a normative hierarchy. This can be relevant for the process of organizational learning, as a shared sense of purpose can prove beneficial to the transfer of knowledge.⁵⁹ Furthermore it can be beneficial as well since it creates no unnecessary obstacles for the flow of information within the company, in terms of normative barriers posed by a vertical hierarchy.

Interim conclusion

The combination of the active context and the influence of the latent context on this can have the following results on the sharing of information within the cluster. The responsibility to reflect on the development process and think in smart solutions does first of all improve the organizational learning, since this would arguably lead to a better understanding of the process through active engagement with it as a whole. Coupled with the normative dimension of members of the team being the owner of a specific part of the process in turn creates an emotional attachment. This in combination with the clear division of tasks seems to increase the concentration of knowledge regarding specific aspects of the development process, embedded within the various members of the team. This concentration of knowledge within specific members of the team can in turn be beneficial for the sharing of information, since this once again leads to an organization which has potentially multiple channels in the form of team members, for distributing information with other companies. whether this sharing of knowledge does in fact take place however, is dependent on the way in which the environmental context interacts with the latent and active context.

3.2.4: Environmental Context

The environmental context consists of all the influence on the company from outside it's own boundaries, which is in this case the context of the cluster Dutch Game Garden, as well as the interaction between companies that are located within, plus the clients and co-design locations with which *Active Cues* works together. During the interview, these resulted in the topics of mentorship within the DGG, the type of information that is shared between companies, as well as the norms of *Active Cues* as well as the norms within the cluster as perceived by them.

Mentorship within Dutch Game Garden

Since *Active Cues* has been very successful in what they do, and since this has allowed their company to grow and prosper, it seems that within the cluster they hold an exemplary position. When talking about their relationship with DGG as a cluster, Mathijs Konings mentions that by now he sees his company as one of the veterans within the cluster. Albeit the plans are to leave at some point to spend more time on working on their own company, he does in fact have the position of mentor within the cluster. This type of relation between companies seems to be a recent development however, since he immediately adds to this that this is a fairly new thing, and he does not yet know exactly what is expected of him aside from helping the participants of the incubator program within the cluster.

In terms of collective learning, as well as the potential organizational learning, this setup of pairing a veteran company with newer companies is of course very helpful, as this relationship between companies does improve the flow of information between one another.⁶⁰ From the point of view of start-ups, this relationship allows them access to the broad range of experiences of a veteran game development company, thus allowing them the opportunity to prevent unnecessary mistakes resulting from a lack of experience. When asked if he thinks whether this type of collaboration is beneficial from the perspective of *Active Cues* as well, the reply from Mathijs Konings was mostly

59 Kane, M. et al. (2005) *Knowledge transfer between groups via personal rotation: Effects of social identity and knowledge quality*. S.I.: Organ. Behav. Human Decision Processes 96 (1): p. 56–71.

60 Howard, M. et al (2015): p. 2093.

positive, explaining that collaboration within the cluster in general has proven to be useful in the past:

“We have contacted some people in the past for work-for-hire things, and the social cross pollination is also very fun: those sometimes resulted in lasting friendships, and we have occasionally gained new employees that way as well. That is also very useful”.

He also adds that informal exchange of information seems to be an inherent characteristic of this cluster. The only downside of this, is that mentorship of veteran companies for start-ups is not yet done structurally, according to Mathijs Konings. Right now, this sharing of information most often takes place on an informal level, which can arguably be a negative thing as well due to the unpredictability.

Sharing Information

Another significant topic during the interview was the type of information which *Active Cues* is willing to share with others, and what types of information are commonly shared between companies in the cluster. The general attitude towards the sharing of information was that *Active Cues* tries to be as open and transparent as possible. Despite this, there are limits to the type of information which they would share. Two of the main obstacles in the sharing of information is firstly that some of this information can destabilize their own position in terms of competition, and secondly that some of the information has to be kept a secret due to the signing of NdA's with clients. Regarding the destabilization of their company's competitive position, Mathijs Konings explains that they would rather not share any concrete plans of the company's future, such as strategies or game concept plans. He also adds that albeit the games themselves are something of a grey area, they also would rather not just make all of these things public. This is mainly due to the fact that their product and services have drawn attention from a lot of other companies with similar products, which are up to this day actively trying to compete with them – up to the point of a personal level where other companies design whole marketing strategies to worsen their reputation. Furthermore, because *Active Cues* does indeed have international ambitions for their games, it means that they cannot afford to reveal too much concrete information about their future plans regarding this. This seems to indicate that, although the atmosphere within the cluster DGG itself seems to be rather informal and friendly in terms of openness, the Dutch gaming industry as well as the international gaming industry are nevertheless influenced by competition.

Also, since the company often works together with other companies or with clients, as well as collaborating with co-design locations, NdA's often have to be signed to prevent sensitive information from being spread. In this sense, any concrete information regarding the specific steps taking during a design process cannot immediately be shared. However, when asked whether this works prohibitively for sharing information and previous experiences with others, this doesn't seem to always be the case:

“Well...that depends. Most of the time an NdA includes all the shared documentation. All results which are being shared as well. [but] I think that, when it comes to the general outline of such processes, how the collaborations take shape and so forth, those are of course topics which you could discuss with others. Absolutely, yes”.

Norms

This means that despite the fact that there are limitations to the specificity of the information that can be shared, lending one's general experience doesn't seem to be a problem in regards to regulations. In fact, the sharing of all the necessary immaterial tools and skills to create games seems to be one of their company's personal missions. On this, Mathijs Konings explains that:

“I think that it is also very important to talk with people about that, to be able to share that kind of information with one another. We live in a society where information is increasingly being shared with more and more ease. Information which you can use to enrich yourself, to improve yourself, so in that regard or at least in my opinion, skills should be shared freely between people”.

This means that the personal norms of their company also positively influence the sharing of information. Konings adds to this personal motivation by saying that they do in fact already share all these tools through their website and have already undertaken initiatives in the past to actively promote this sharing of information with newcomers to the gaming industry. He does add that albeit this arguably weakens their own position in terms of competition, this shouldn't be seen as a problem. On this, Konings explains that the company in general has a positive mindset towards competition, since their ultimate goal is to contribute something to the target audience. To achieve this, profit and competition are a means to an end, not a goal in itself:

“I actually worry more about the question whether those products will actually do what they were intended to do. Or if they will in fact have a negative impact on the image of games and digital products in the healthcare market as a whole”.

This means that rather than worrying about sales figures due to competition, he and the company itself does more often worry about the quality of the other competitors' products, and whether or not these harm the image with the serious game industry has in the eyes of their target audience, rather than the threat they pose as competition.

3.2.5: Conclusion

Concluding from this, the interaction between the active, latent and environmental context of *Active Cues* can influence the exchange of information in various ways. Most of all, the structured and fleshed out approach of *Active Cues* regarding their development process, combined with the normative responsibility of remaining critical toward this process is one of the improving factors for organizational learning within the company. Not only does this stimulate organizational learning by embedding critical thinking into the development process, it also stimulates the will to learn on an individual level. By having a clear division of tasks and by making individuals within the organization the “owners” of little parts of the process, personal attachment to the project is encouraged, potentially leading to the volition to improve and thus to learn. What is more, the open management structure and development process in the form of scrum and agile methods allows for the mitigation of mistakes during this process, allowing the employees within the company to learn from these.

These aspects combined create the conditions under which knowledge gained through experience get concentrated and embedded within specific individuals within the organization. This can be beneficial for the sharing of information, since this means that should another company request aid in terms of experience regarding certain development aspects, this information can be distributed more easily as opposed to the situation where knowledge gets spread out across multiple members of the team. This is furthermore improved through the latent and environmental context.

In terms of collective learning, the general attitude of the company towards the other members of the cluster Dutch Game Garden is one of transparency and openness, with norms of sharing embedded within the company's stance towards competitors: improving the services towards their target audience, also if this involves sharing information, is almost always preferable even if it

means weakening their own competitive position. This core value of the company is already implemented in various ways, such as the sharing of all the material and immaterial tools for developing serious games, as well as being a mentor to participants of the incubator program. All this no doubt improves the flow of information, as these things indicate that the sharing of non-sensitive information is not obstructed in any way, and is in fact even experienced as likable by Mathijs Konings personally, as well as being something to be strived for by *Active Cues* as one of their core values.

In this regard, there are only two aspects of their company which might hinder the exchange of information. The first one is the necessity to sign NDA's with their partners and clients, which prevents them from sharing personal information from participants or project-related development information which is too specific to be shared. The second type of information which the company would rather not share are any future plans, since this would potentially undermine their competitive position.

3.3.- Case Study III: *Sneaky Mammoth*

3.3.1: Introduction

The third case study is the game studio *Sneaky Mammoth*. This particular studio has been around for longer than three years, and should thus be counted as having a fair bit of experience in comparison to the rest of the Dutch gaming industry, having completed over seven full projects, and having worked on many more in between. This particular game studio is interesting to analyze for this research due to their choice to produce both entertainment games, as well as games with an applied nature. Given the difference in requirements and processes between entertainment and serious games, their experiences with prior projects can be a valuable indicator of what type of institutional aspects this results in, and what effect these aspects have on the organizational and collective learning. This interview was done with Hans Dunnik, one of the two founders of the company, and the person who handles the business and marketing side of the company. The interview will be structured in terms of the components of the active context, latent organizational context and the environmental context, in order to analyze how the institutional aspects related to organizational learning interact with one another, and how these influence the sharing of information within the cluster.

3.3.2: Active Context

The active context consist out of the members, tools and tasks as well as their interaction within the company.⁶¹ Organizational learning processes are related to the specific interaction between these aspects. During the interview the topics which were most significant were the composition of the team, the creative process as the result of this, the memory of the organization embedded in both the team as well as the tools, and finally the communication processes during the production process.

Team

The active context of this particular company is very interesting, since this game development studio tends to work exclusively with project based contracts, causing the team to be recomposed with every project, depending on the requirements and characteristics of that time. The only two permanent members of the organization are the two founders, Hans Dunnik and Sven Boers, who respectively do the business and marketing aspects of the company and overseeing the development process of the company. Aside from them, all the other members of the team are selected depending on the specific characteristics of the next project. Most of these are freelancers who are hired for one specific project, although some are hired for multiple projects due to their skills and familiarity

61 Argote, L. & Miron-Spektor, E. (2011): p. 1124-1125.

with the requirements of a project. Interns are also common within the company, mostly coming from the local education programs, since Sven and Hans sometimes provide master lectures as a hobby. In terms of structure within the team, Hans Dunnik explains that they try to maintain a clear division of tasks. This is to avoid stress from stacking up different incidental tasks, as well as to prevent the disruption of the creative process. The way in which this specific setup of the team can influence organizational learning is dependent on the structure of the creative process, as well as the memory of the company and the communication between the members of the team.

Creative Process

In regards to the creative process, Hans Dunnik explains that they make use of scrum and agile method in order to fit the iterative design process into a structure. The reason for this is firstly to be as flexible as possible and secondly because this way of working is easier to adjust the game concept to the needs of the client. While explaining the difference with other design processes, Hans Dunnik uses the words “creative process” to describe the difficulty of adjusting the creative output of his employees into a coherent whole. By not planning anything in detail beyond two weeks each time, it is easier to make adjustments to the overall trajectory, and it leaves room for mistakes as well:

“That is the reason why we work with scrum. That way, you only plan two weeks ahead. We can't plan six months ahead, that just doesn't work. I don't know what kind of 'fire' will pop up next, what goes wrong this time..”.

This makes the choice for a scrum method a logical choice to structure the iterative design process. The only recurring elements within the process of creating a game are the milestones which are based on the initial sketch of what the final result should approximately look like.

This estimation of the general design process also ties into the second reason to maintain this method of development. Hans Dunnik argues how this method is also used since it affords to justify the choices made during each of the phases of the project, as well as for explaining the process to their clients in terms of budget. Most of the time Sven Boers or Hans Dunnik already have a concept thought out in advance, which Dunnik then tries to sell to their potential clients. Dunnik explains that he usually has a pretty clear idea of the big lines of each concept, and with each milestone there is further communication with the client to make a plan for the next milestone. This makes it easier for the clients to consider which features they want to have included, and how much this will cost them in the end. In terms of the specific content of the game everyone within the team has a say on how it should be done, albeit Sven and Hans have the final say in this.

An interesting aspect of this, is the fact that Hans Dunnik describes that in the process of combining both the creative aspects of the company and the management and marketing aspects together, he and Sven often clash harshly:

“We have a very clear structure of the company. We have two founders and owners: I myself handle the planning, both financially as well as project-based, and Sven handles the internal planning and keeps the overview of the creative process how everything is progressing. [...] Those two parts clash harshly with one another, because we try to keep the schedule in check”.

Dunnik describes that this clash is most of all a necessity and should in fact be seen as something positive, since it helps to keep an effective overall schedule. It also helps to avoid any unnecessary distractions during the design process, since having to both develop a game, as well as having the

responsibility to keep an eye on the final process, budget and deadline would pose too many challenges to fully express their creativity, so seems to be the reasoning: “Zij mogen dromen naar wat het ultieme product is wat we afleveren, en ik blijf de realistische factor daarin”. For this reason, the two founders do in fact actively search for this confrontation, in order to find the ideal middle ground and incorporate as much as they can within their final product.

Memory

In terms of memory of the company, *Sneaky Mammoth* has an archive which consists of two parts. The first part is the project section, which contains all information regarding the development of previous projects. This section can contain photographs of the scrum boards, conversations during team meetings, and notes or recordings of the communications with their clients, partners or stakeholders. The other part of the archive is the company section, which contains the data related to the business, management and marketing aspects of the company. The company section is solely accessible by Hans Dunnik and Sven Boers, and is closed off to the other employees, whereas the project section is freely accessible for everyone in the company. However, there are also parts of the projects which are never shared with the other employees due to the signing of NDA's with their clients. This means that although most information is saved and stored so that it can be retrieved and revisited again at a later point, a lot of this is not freely accessible for all members of the team. The main reasons why information is stored is to reflect on the process at a later time, as well as being used to justify specific steps in the production process to the clients. Usually the information of the latest project is reviewed every half a year as well, during a timespan of at the maximum a week, in order to find out problematic aspects of the process. After this, the data is then ordered and put in the archive as well.

Communication

Regarding the active context, the final aspect which can have an influence on organizational learning and the sharing of information within the cluster, are the means of communication. Aside from the simple face-to-face communication – since there is only one development room, in which everyone works next to one another – the main means of communication are the two scrum boards within the office. Dunnik explains that one board is for the clients, should they want to visit them and have the current phase of the process explained to them, and the other one is meant for him and the other employees to keep an overview of all the tasks which are currently being worked on. Each member of the team has four magnets with which he or she can pin a task to the board. Once someone has more than four magnets, something is wrong in the first place, since this usually indicates that the person is trying to work on too many tasks at the same time. This allows Hans Dunnik to keep track of everyone's progress, and it means he can sort out problems right away.

On top of this, there are stand-up meetings at the beginning and at the end of each day in which the process is being discussed. At the beginning of the day these are on the planning of the day, and the ones at the end are meant to discuss the progress made and why certain things might have gone differently. Finally, every half year there is a week during which the leftover loose ends of projects are being tied up, and during which the overall process is discussed. These reflective meetings usually take about a day, despite a week being planned out for them, depending on how much needs to be discussed.

Interim Conclusion

While looking at these aspects of the active context, there are a few observations to be made. Like the previously examined case studies, the flexible development method affords for additional activities during the development process due to its flexible outline. This allows for the potential of incorporating moments in which meetings with other companies occur, either in a formal manner or

in an unannounced informal manner. There are however limitations to this, based on the composition of the team.

While project-based teams can be very effective in terms of stimulating creativity and thus for acquiring a broad spectrum of know-what and know-how knowledge for all the employees involved, it can simultaneously be a weak spot since a large portion of the experience based knowledge embedded within the employees leaves the company at the end of the project.⁶² In terms of sharing information within the cluster, this means that all acquired knowledge over time is concentrated around the two founders, meaning there are less channels through which the sharing of information can potentially occur, since exchanging information seem to happen through spillovers during informal, ad hoc meetings. Another aspect of the active context which might hinder the exchange of information, is the fact that not all information of previous and current projects can be shared with the freelancers due to the signing of NdA's. Although this cannot be helped since the regulatory aspects downright prevent the sharing of information with freelancers.

3.3.3: Latent Context

There are however many aspects from the latent context of the organization which also influence the exchange of information. The latent context of an organization are the underlying aspects which do influence the active context, but cannot act directly itself, mainly relating to shared norms and values within an organization, as well as the general cultural background of a company. In terms of these effects, there were several common denominators highlighted within the interview, the first one being the norms and values expressed in (unspoken) mentality within the company, the second one being the normative interpretation and performance of the hierarchy within the company, the image which the company tries to strive for, the requirements which are kept in mind while hiring specific employees for projects, and finally the social cohesion within the company.

Mentality

While looking at these elements, a few of them were already directly in connection with some of the regulatory aspects regarding the sharing of information. While talking about which information is shared with the freelancers or not, Hans Dunnik explains that due to normative reasons and personal motives, he does not generally share all of the information of project with his employees. This is partly because of the NdA's, but also partly because he considers this to be a part of building trust with his clients, not sharing any information they have not shared with the other employees themselves:

“Because that is a bit of respect towards my clients or partners. They know who I am, and who my business partner is, but they don't know everyone who works on their project. They don't know everyone, partially because that is flexible [...] for that reason you have to make sure that you protect their privacy a little bit. That you don't just share any information with people they don't know. That is a little bit of trust which you try to build, you want to remain respectful towards your clients”.

Although there aren't any real regulations within the NdA's which prevents Dunnik from sharing information with his employees – since all employees have a partial NdA incorporated into their contract anyway – it are mainly normative factors which play a role in this. Since these freelancers are hired for each project and aren't an integral part of the company, Hans Dunnik feels it would be disrespectful towards his clients as well as bad for building if he would freely share all information. He does add to this by saying that, if the clients should decide they want to meet the team, they are

62 Sawyer, K. (2012) *Explaining Creativity: The Science of Human Innovation*. Oxford, New York: Oxford University Press: p. 258-260.

of course welcome to do so, and can drop by at any time.

Another one of these normative rules which aren't directly expressed in concrete processes within the production process, but which nevertheless influences the active context, is the mentality of the company towards mistakes, as well as their take on the responsibility of completing tasks. When talking about managing the production process, Dunnik explained that because of its creative nature, it is hard to completely plan out all six months of the production, since he doesn't know which “fires” are going to pop up next. When asked if there are any sanctions should things go wrong, Dunnik's answer was that there was only one real rule regarding this inside the company: “It doesn't matter how you do it, as long as the work gets done. And if you can't make it, just make sure that you notify me in time”. This interpretation of the development process as being inherently connected to mistakes does help to improve organizational learning, since this would lead to an acceptance of this, and offer the opportunity to learn from them. As long as mistakes are reported in time, they can be mitigated for due to the flexible method of production.

Another one of these aspects is the interpretation of conflict as being something positive rather than something which should be avoided. Because there are so many bumps within the process of creating games, of which a significant amount is related to management issues, conflict between Sven as the creative director and Hans as the one who keeps an eye on the general planning is actually something which is strived for. These things indicate that within a learning process, conflict is not something which should be avoided, but something which can serve as a means to keep realistic goals, rather than tilting too much towards unrealistic projects which can never be effectively completed. This in turn leads to the gradual acquiring of know-what knowledge in terms of what is feasible and what is not.

Hierarchy

Another aspect of the latent context which influences the active context is the normative dimension of the hierarchy within the company. Although Sven Boers and Hans Dunnik set the main lines of the company, as well as having the final say in decisions regarding the features and content of the game, everyone in the company has an equal standing and they try to keep the development process horizontal in terms of decisions:

“Generally I try to keep things as horizontal as possible, because we have a team of about five, six or even eight people, and most of the time that is just one team which constantly works together. During the brainstorm sessions and the reflection, everyone has an equal say, everyone has equal value”.

In this sense everyone is respected in his or her expertise, but it does also mean that because Sven Boers and Hans Dunnik have the final word in it, there is some form of hierarchy within the creative process, which is based on their own specialized knowledge. Furthermore, because they are the founders of the company, and have to do this together, they have another indirect rule, which states that whenever there is a major decision, both Sven and Hans need to agree to it, otherwise it won't happen. This ensures that everyone in the team is behind the decision to work on something, guaranteeing both the personal connection behind a project as well as maintaining a sense of realism regarding the feasibility.

Social Cohesion

In terms of social cohesion, the atmosphere is described as being rather informal, since it is only one office and everyone sees the others the whole day: “Ja hoor, het is gewoon lekker informeel”. The specific use of words here seems to indicate that this is a given, something which isn't really an

issue. When talking about this topic, the main emphasis laid on the fact that everyone is able to talk about problems during the day because of this informal situation, as this is something they try to maintain. With this Hans Dunnik mainly meant the small frustrations which are mostly the problem, since these tend to build up and cause problems on the long term. For this, Hans Dunnik and Sven Boers share the task of mitigating these incidents, where Sven Boers focusses on anything related to the project itself, and Hans Dunnik handles any problems which a member might have regarding other members of the team.

In regards to the bond between themselves, Hans Dunnik describes how they know each other for over seven years by now, at first as acquaintances and later as business partners, since Dunnik added to this that at the time when they started the company, they had to make clear rules regarding the division of tasks and how they would interact with each other to run the company. Currently they seem to see each other as friends as well, since the description of the social cohesion within the company mainly entailed a description of the boundless level of frustrations which each of them evoke in the other, followed by a lot of laughter. This is of course important since this relationship in combination with their mentality towards clashing ideas can work well in sorting out tensions regarding ideas, in turn promoting a smoother process and the organizational learning with this.

Requirements

The final part of the latent context which influences the active context, and in this case, also the organizational learning within the company, is the requirements for selecting members of the team, and its normative dimension. The reason why this is of relevance is because there are, according to Hans Dunnik's experience, a lot of students in the game industry who specialize themselves too much, and end up not having a useable profile for organizations to hire them:

“They are too specialized, they developed themselves too much toward one specialism that companies will never be able to use them. For example, we have had a programmer as an applicant one time, and he was like 'I can perfectly program an AI'. But when I asked him to design a basic User-Interface – something which the average person can do after two days of experience really – he was just unable to do it”.

The problem with this is that most game companies, including *Sneaky Mammoth*, is often too small to afford the training time it would take to compliment the specialized skillset of these applicants. This unfortunately sometimes leads to team members being fired, with all the negative impact for the process as a whole, as well as in terms of organizational learning, since this means that one of the members in which knowledge is embedded is lost to the organization.

Another aspect which might contribute to this loss of knowledge in the sense of members being fired due to not possessing the required characteristics, is the high level of competition in terms of job opportunities as a developer. According to the figures of the Dutch Game Monitor as described by Hans Dunnik, only 5% of the total number of students within the gaming industry actually manage to find work there. This fact, although being beneficial for the setup of *Sneaky Mammoth* who works with project-based contracts, unfortunately leads to the situation where it is easy to find replacements for members who cannot meet the expectations since it is the case that “for you, there are three others”. Although this fact can be good in terms of creativity as this increases the team exposure to different points of view and ideas, as introduced by the switching of team members, it does also arguably contribute to a loss of total knowledge acquired and embedded within the members of a company over time.

Interim Conclusion

Connecting these aspects of the latent context with the active context, the following things can be argued. Regarding the sharing of information there are several normative barriers which might hinder this process. The first barrier can be found in the personal opinion of Hans Dunnik on building respect towards the clients of the company by not sharing all information of their talks directly with all employees. Although respectful behavior does arguably aid in maintaining a good relationship with their clients, it simultaneously can also hinder the sharing of information within the cluster, since there are moral barriers which prevent the flow of information, both within the company, and in turn causing less information to be potentially disclosed to other companies as well.

However, at the same time there are a lot of aspects which also create favorable conditions for the sharing of information. The mentality regarding confrontation and mistakes combined with an informal, friendly atmosphere within the organization create a favorable situation for sharing information with one another, since there are very few normative, hierarchical or emotional barriers for this. There are furthermore personal motivations which can potentially improve collective learning through the exchange of information. Hans Dunnik already explained how most of the interns are from the local educational programs due to their involvement in them. He adds to this by saying that giving master classes on game design for these educations is something of a hobby for him and Sven Boers, which can also be a potential beneficial factor when it comes to sharing information within the cluster. This is however dependent on aspects from the environmental context as well.

3.3.4: Environmental Context

While analyzing the aspects from the environmental context as described by Dunnik, there are several elements which plays a role in terms of collective learning within the cluster. The environmental context are all the elements which have an influence on the active and latent context, but which are located outside the boundaries of the organization.⁶³ The topics which Hans Dunnik discussed during the interview related to this are firstly the motivations for clients to make use of NdA's, what type of information is commonly shared within the cluster, as well as the norms connected to the sharing of this information, and finally several characteristics of the Dutch gaming industry in general which might influence collective learning processes.

Information Clients

One of the striking things which were highlighted during the interview is that Hans Dunnik and the company *Sneaky Mammoth*, in and of itself are not opposed to the idea of sharing information within the cluster at all, rather seeing it as something useful. Yet one of the main obstacles in this are the NdA's which many of their clients ask them to sign at the start of each project, somewhat prohibiting the sharing of specific information from the related projects. According to Hans Dunnik, this is in fact a shame since this type of information can lead to interesting reflections and post-mortems of their projects, as well as providing very clear, concrete examples of projects which one can expect as a game developing company. But unfortunately this is not possible due to the regulations regarding this information.

According to Dunnik, the reasons behind this hesitance from the side of their clients are twofold. The first one has to do with the seemingly shared notion within other industries that games are something new; a fairly unexplored area, and thus carrying the potential to provide them with an edge over their competitors, strengthening their own market position without having to compete with others on this terrain. This means that companies are generally reluctant to share even the fact

63 Argote, L. & Miron-Spektor, E. (2011): p. 1127-1128.

that they are putting effort in developing a game for themselves:

“Companies don't want to share those kind of things. Especially commercial companies [...] Small commercial companies are afraid they will receive too much competition, or fear that we will sell the concept to others as well [...] and for that matter, if we are already allowed to say what we are working on halfway during the project, other companies could potentially come to us with the same request. We wouldn't mind, that's for sure...but our clients definitely do!”.

For this reason, especially smaller companies are reluctant to share information regarding the production of a game for them, fearing this information will jeopardize their market position, and will therefore ask the game development studio to remain silent about this. The second reason for the unwillingness to disclose information about these projects has to do with the fear of losing face, should a project become a failure. This once again has to do with the notion that games are new, and hence their effects cannot be guaranteed in terms of fame of name, or proven success in the past regarding their specific purpose:

“Especially because games are new, they are skittish about it. Because of their novelty, games are seen as a means to gain an advantage over the rest. Yet at the same time, because they are so new, they don't want to talk about it with the fear of losing face should a project become a failure [...] So that is a danger from their point of view”.

For these two reasons, especially when it comes to commercial companies, clients of *Sneaky Mammoth* often demand for the signing of NDA's regarding their project. This is usually related to the visuals of the game, the different concepts of the game, as well as the engine, although the restrictions regarding the engine is more closely related to their own interests, since this prevents the clients from using their engine in a collaboration with other game development studios, should they decide to start more game projects afterwards. These limitations somewhat prevent the flow of specific information regarding these projects to other companies within the cluster. These limitations are of course dependent on the type of company, since Dunnik adds to these statements that their latest game is in fact a completely transparent project, since it was commissioned and funded by the government, which doesn't require the signing of NDA's due to the public nature of the game.

Sharing Information

This inability to share specific project information with others is considered to be a pity, since Hans Dunnik does not have anything against the idea of sharing information. In fact, when asked about the situation within the cluster Dutch Game Garden, he describes that the general consensus seems to be that sharing information is a good thing. There seems to be a culture within the cluster of informality and general openness towards one another, and Dunnik claims that he regularly helps other companies by sharing general experiences, such as the difficulties of a development process. In the past, he himself had several mentors and their experience has helped him to avoid various pitfalls. This has led to his personal policy of being open to any kind of questions which other game development companies might have for him, as he states that others are always free to drop by and ask for assistance. Albeit this cannot always be as specific as they want to, they will nevertheless try to help, and according to his experience, this helpful attitude generally seems to be a shared characteristic of the gaming companies within the cluster. This is contrary to the idea that the gaming industry is very closed off due to the perceived competition. Dunnik explains that this is mainly related to the requirements set by his clients:

“But that is mainly towards our clients, not towards ourselves. We tell each other all we can, but in some cases we are simply not allowed to share something... but that is almost exclusively caused by the demands of our clients, not because of ourselves”.

There are however norms regarding the sharing of information within the cluster. For Hans Dunnik, this has to do with respect, as he is willing to share most forms of information, and is willing to lend assistance, but in return, he does expect the same treatment from other game development studios. Unfortunately, this is not always a shared consensus, as spending time to help others will often be perceived as a decrease in income for them as the result of having less time to spend on working for themselves in favor of helping others:

“This [sharing of information] is very beneficial, but not everyone is willing to spend time on it. They only want to take, but don't want to give anything in return. Doing this means they will generate more income on short time. Long-term, now that's a whole different story”.

Unfortunately, this sometimes results in bad relationships between companies due to companies refusing to return the favor, since these things are always on an informal basis, resting on a foundation of trust, rather than regulations. Currently, the only structured forms in which information is shared in a formal way, is through the incubator program, where experts are invited to share their experiences with the startup companies that partake in the program. This is only a monthly occurrence however, and according to Dunnik, this can sometimes be a problem as many startups could use more assistance in regards of management and marketing.

Characteristics of the Game Industry

This in turn has to do with the general characteristics of the gaming industry which Hans Dunnik describes over time during the interview. One of the striking things about the industry from his experience, is the fact that albeit startups know how to develop games, they often know very little about the marketing aspects which running a company introduces, as well as possessing little knowledge about managing a creative process within the context of a company, since these aspects are rarely part of the core curriculum of game development educational programs:

“[...] Most developers who enter the labor market have no experience at all in terms of management nor marketing. That is something which they never learn during their education. That has never been a thing in game development. They are slowly beginning to implement these things however, but by far, most educational programs, mainly MBO, which is about 80% of everything, teach preciously little in terms of marketing or management, as well as documentation for that matter. So that's tough. HBO teaches very little as well, and so do universities”.

This of course does have its negative impact on the organizational learning processes within startup companies, as well as on the collective learning since these companies usually do not last very long. Dunnik explains that these companies often fail because they put all their effort into one game, their personal dream project. While doing this, it doesn't necessarily mean that the game itself is bad, but that the context in which they try to produce and sell it is often not the most suitable. He explains this by sketching the situation in which a studio produces a shooter, which in itself might be good, but once this shooter is one of the hundred other shooters which are published at the same time that year, in which case their market position is already unfavorable, whereas the company's expectations and dependency on success are often huge.

3.3.5: Conclusion

From this, we can conclude that there are many beneficial factors which can improve organizational learning and with this, lay the groundworks for collective learning in the form of sharing information. Similar to most other game companies, the scrum and agile method of work do promote organizational learning, since this allows for the room to make mistakes and in turn learn from them. Furthermore, since we have seen that from Hans Dunnik's experience, most of the interaction between companies take place in an informal way, sometimes through third spaces as well. This means that a flexible development process which allows for meetings like these to take place can promote collective learning as well.

Furthermore, the specific saving of information within the company's archive can function as a memory, allowing for the retrieval and reflection on these experiences. Albeit the limited access to these experiences as caused by NdAs and the closed access of the business part of the company to some of the members can introduce limits, it does nevertheless allow for learning to take place in the long run. Despite the restrictions, general experiences regarding the development process can be shared after all, and after a while, even the specific data previously restricted by the NdAs can be shared, albeit this takes years.

These regulatory aspects of the company in combination with the otherwise open attitude of the company and Hans Dunnik's personal policy regarding the sharing of information, both within the boundaries of *Sneaky Mammoth*, as well as within the environmental context of the cluster allows it to function as a catalyst which improves collective learning, since all of these aspects combined put up little barriers for the sharing of information, and do improve the informal processes through which knowledge can be shared.

Regarding the hindering aspects of the active context, the fact that the company works almost exclusively with project-based contracts can arguably be both a benefit but also a limitation. Although the two owners of the company do in fact gain knowledge over time, it also means that the specific knowledge regarding the actual production of the game, the know-how resulting from the experience of completing projects, does in fact leave the company after every project. This can arguably lead to the concentration of all the knowledge around two persons within the company, in turn leading to a dependency of communication between the shifting team of the organization, and the two founders, in terms of distributing knowledge, which could otherwise have already been embedded within permanent members of the organization.

On the other hand, this open structure does improve the overall creativity within the company, since the cohesion between the team can be defined as being weak ties; the input being varied due to the shifting team, while this reduces the danger of complacency due to a large number of shared opinions within the team. This increase in creativity can in turn also be interpreted as leading to an increase in overall types of experiences gained over time, albeit these are embedded within both the production structures of the organization, whereas the know-what type of information is only stored within the two founders, making the aspect of communication even more of a necessity. Fortunately, the open structure within the company in terms of social cohesion and informal atmosphere do not seem to pose a problem to this.

3.4.- Case Study IV: *Abbey Games*

3.4.1: Introduction

The final case study is the game development studio *Abbey Games*. This development studio focusses on creating complex strategy games for entertainment purposes. It has been founded in 2012 and thus it is arguably one of the veteran companies. The studio has a team of eleven people,

making them a relatively large company in comparison to some of the development studios as well. Because of their complete focus on entertainment games, and because of their tendency to create a game first, and then selling this directly to the audience rather than working with commissions from clients, this company is interesting in terms of organizational and collective learning, due to the difference with the other case studies. The interview was done with Joni van der Leeuw, who is the producer as well as the musician of the company.

3.4.2: Active Organizational Context

The active context of the organization is related to all the tools, members and tasks within an organization, including their interaction.⁶⁴ These are the elements of the company in which knowledge gets embedded over time, and through which new knowledge gets produced. These interactions can in turn have an influence on the sharing of information within the cluster, in combination with the latent and environmental context of the organization. During the interview, the topics which were significant in terms of organizational learning within this company were the development process, the means of communication within the company, with a focus on their meetings, and finally the memory of the company.

Development Process

Similar to the other development studios, *Abbey Games* adopt a version of the scrum and agile method of production as well, making use of sprints of two to three weeks each. Joni van der Leeuw explains that this method affords them more flexibility during the development process in terms of the overall schedule and milestones, as well as causing mistakes during this process to have a less negative impact upon the overall schedule. Joni van der Leeuw explains that although this method of working with short sprints is something of a recurring method in retrospect to their previous projects, the actual production process is never fully determined in any static way, not even in terms of general phases during a project. Instead, the company tries to decide what kind of trajectory is most suitable for the specific game they are aiming for. This has the benefits of being even more flexible, aided by the fact they rarely are bound by strict agreed-upon deadlines with their clients. However, it also has the downside that this makes it hard to estimate what the total production process will look like from the beginning. This is of course also dependent on experience, since previous project can provide reference in this. Despite the relatively long lifespan of the company van der Leeuw adds to this that they are still in the process of learning in terms of gaining know-how in adequately managing the process. He explains that because of this, it is key for them to define and document their process as best as possible, in order to combine all of the production processes of the various members of the team.

Communication

A large part of defining the process and documenting it, is related to the communication. Generally speaking, *Abbey Games'* particular version of the scrum and agile method entails working in sprints of two to three weeks. At the start of each week there is a meeting in which the creative director outlines the course of action during these weeks, which the team can then review. After this the members of the team can decide if this is possible in terms of creative output, and make their own planning for the weeks. At the end of these weeks, there is also a retrospect meeting in which the progress is reviewed and new plans are presented. At the start of each day there are also meetings in which the members of the team outline their plans for the day. During these stand-up meetings, there is a very clear script on what kind of information should be discussed, in order to avoid unnecessary obstructions or confusion regarding the information that should be saved for later.

On top of these ways of communication, the whole company uses the platform Slack to organize

64 Argote, L. & Miron-Spektor, E. (2011): p. 1124-1125.

and manage all their communication. This is interesting, since all of the team is usually located in the same office space, but Joni van der Leeuw explains that this is a conscious decision, in order to prevent unnecessary disruptions to the development process as much as possible. Despite or perhaps because of the informal atmosphere within the company, face-to-face communications are often intertwined with informal small-talk, which in itself is not a bad thing – and is arguably necessary to maintain an overall steady work rhythm and creative output – but is nevertheless considered to be a bump in the creative process.⁶⁵ From experience, Joni van der Leeuw claims that although these small moments do not seem like a big deal in terms of time, they are in fact disruptive due to the “recovery time” to pick up the creative flow again after these occur: “It isn't so much the distraction which take up a lot of time, but rather, it is the recovery time it takes to pick up the creative flow again afterwards. That is the part which always takes so long”.

Memory

The final aspect related to the active context is the company's memory in terms of knowledge embedded within practices, employees or within physical and digital archives. Aside from the different versions of the game they work on, *Abbey Games* has several methods of archiving information or displaying information. In order to keep an overview of the projects, as well as to save information, the company uses the platform *Trello* to save the majority of their information, as well as to keep an overview of the process. The advantage of this according to van der Leeuw, is that this medium affords them to do many things, but the downside of this, is that it requires consistent use by the members of the team, and as his experience has indicated, this is not always the case and they are still in the process of optimizing their use of this platform. He explains that for this reason it is nevertheless required of him to spend about half a day each week simply sorting out all the data produced by the team on *Trello*, structuring the data and archiving it for later review or use. This way everyone has an overview of the total project, or at the very least Joni van der Leeuw and Adriaan, the creative director of *Abbey Games*. Van der Leeuw adds to this that a lot of information is also stored on the Google drive, and the company also uses several analogue methods of storing information, such as the weekly schedule, which is displayed on an physical whiteboard. However, he tries to remain consistent in this by transferring everything back to *Trello*, in order to keep an overview.

There are some examples of information which is not stored within the company's memory however. The information which is generally not saved, are the notes and action points of the stand-up meetings, since Joni van der Leeuw says that these points are to be implemented right away, thus these points do not need to be archived. The responsibility of implementing these points lay with the individual members of the team, hence it seems to be expected of the individual members to execute them without any further input from Joni van der Leeuw.

Interim Conclusion

While looking at these aspects of the active context, the aspects which improve the organizational learning seem to be the use of the common flexible method of scrum and agile which allows for the making of mistakes and the embedding of these experiences in new processes and procedures within the company. The use of *Trello* as the main means of distributing information does furthermore improve organizational learning since everyone is able to keep track of their team member's progress. On top of this, they all have access to all information stored within the company embedded within their archives. The use of *Slack* finally also improves organizational learning, since this medium affords, amongst other things, for a structured distribution of information by labelling and categorizing specific conversations.

65 Van den Bossche, P. et al. (2006) *Social and Cognitive Factors Driving Teamwork in Collaborative Learning Environments*. <http://journals.sagepub.com/doi/pdf/10.1177/1046496406292938> (06-07-17): p. 514-515.

In terms of collective learning through the sharing of information, these organizational learning processes all have a positive influence. Having open access to any information stored either within the company's archives or their members in a structured way provides suitable conditions for sharing information. Should other companies request information or experience from this company, this open access and structured way of communicating allows information to be distributed more efficiently through the active context of the organization. These predominantly regulatory aspects of the company do however get influenced by the latent context of the organization as well.

3.4.3: Latent Organizational Context

The latent context of an organization in terms of learning is related to all the normative dimensions underlying the active context. In the context of *Abbey Games*, this context seems to be quite significant due to Joni van der Leeuw's emphasis on the informal atmosphere within the company, and the seemingly predominant normative dimensions of their development process. The topics related to this latent context which turned out to be significant during the interview can be summarized under the concepts of the company's stance towards potential disturbances during the process, norms regarding the process, the atmosphere within the company, and the normative interpretation of the hierarchy within the company.

Disturbances during the Process

An aspect of the latent context which influences organizational learning are the notion that obstructions during the development and creative process are seemingly inherently recurring elements. When asked what kind of things can go wrong or if there are any recurring errors, the answer of Joni van der Leeuw was “Nou ja, aan de lopende band gaan dingen dus fout”. These things can be anything, ranging from technical problems with the engine, to the obstructions due to small incidental disruptions, such as conversations with visitors to the company. On this, van der Leeuw give the explanation that:

“In comparison to the other industries, we are a fairly small company. And well, as is the case with smaller companies, you are also confronted with additional tasks which aren't necessarily part of your job within the company [...] and those things somewhat disrupt the process”.

As Joni van der Leeuw explains, these can range from anything. A recent example of this is the fact that they are scouting for a new office. This in turn results in all kind of additional tasks for both him and the members of the team, such as asking for their opinion or preferences or cycling over to the different locations to check them out. All these things create a disruption in the development process. However, the general mentality surrounding these short-lived incidental disturbances, is that they are an inherent part of the process, and thus can never be fully avoided. Furthermore, Joni van der Leeuw explains that technical problems, such as limitations to their engine, or flaws in the development process are in fact seen as “interesting” since they can be used to improve the company and the production process.

However, this seems to be related only to the disturbances which can be solved and used to improve the overall organization, as Joni van der Leeuw also adds that they are still trying to prevent disturbances caused by additional activities, as any of these which aren't related to the development process will nevertheless disrupt it. However, having a positive attitude toward disruptions related to technical issues can potentially be a beneficial aspect for organizational learning, since this promotes the members of the organization to be open about technical problems, rather than keeping them under the radar.

Normative Dimension of the Process

Related to this is the importance which van der Leeuw places on improving the atmosphere within the company. While describing the development process, another topic which kept recurring was the importance which he, as the producer, placed upon improving the atmosphere within the company. Combining different creative processes together is hard due to the relative unpredictability of creativity and the inability to effectively steer this process. Joni van der Leeuw continues that for this reason, an open unobtrusive communication should be maintained, so that everyone knows what to expect from one another. He explains that in order to maintain an open communication between members of the team, it is his job to remove any obstructions in this process. In his optics, this mainly has to do with maintaining a good, somewhat informal atmosphere within the company:

“Eh, yea, that is very tough...its mainly about maintaining and stimulating open communication as much as possible. Making sure there aren't any obstructions in that. And in my optics, this mainly has to do with improving the atmosphere within the company”.

The reason for this seems to be the recent history of the company, prior to him being the producer responsible for organizing the creative process. He describes that a few years ago, the company had a culture of blaming and shaming regarding setbacks in the completion of tasks, and in his experience this was not only unpleasant but also very unproductive. While talking about this, van der Leeuw describes how this was mainly a culture which was unconsciously performed by the members of the company, in turn having a negative impact on a number of things, the foremost one being the communication regarding one's progress.

This unconsciously performed culture mainly took place during the retrospect meetings, where it was a common occurrence that, should a member of the company have been unable to meet up to the initial expectations in terms of creative output, he or she would be blamed for not working hard enough, and this individual as well as the rest of the team would then agree. This would often result in apologies and the promise to work harder next time. According to van der Leeuw, the problem was that this cannot be forced or changed like that at all, since it is a creative process. Joni van der Leeuw described these type of problems as being retraceable to the functioning of the team, rather than the efforts of an individual:

“The [creative process] is hard to force, and such a situation says a lot more about malpractices or frictions within the team, rather than problems related to an individual. But because everyone only points towards the individual, you can't address these issues. This in turn leads to people believing it is in fact their fault. But this is not productive at all, the question who is to blame is irrelevant. Rather we, as a team, have to prevent these mistakes together”.

When Joni van der Leeuw became the producer within the company, he therefore tried to change this mentality. Instead of blaming and shaming, open communication was introduced as a central part of the production process. His reasoning behind this is that open communication creates a better understanding of what everyone can expect from the others, thus it becomes possible to gradually work toward a refined version of the production process where mistakes are a less common occurrence due to the experience gained during previous projects. Before this type of open communication is possible however, van der Leeuw explains that it is required to build trust between the employees:

“Now it is more like, guys, if you can't do it, then try to adjust your expectations so that we know what we can expect from you. As long as those expectations are adjusted, we can strive to keep the creative production as high as possible. If those expectations are not met, then you can't anticipate either, and the agreements you made are basically worthless. Right now, we mainly try to create a basis of trust, and only after that will we try to maximize everyone's creative output”.

This in turn promotes a situation in which one can learn from previous experiences, since there is no longer a negative impact in terms of norms and values within the company regarding one's creative output. Joni van der Leeuw illustrates this with the time on which everyone can arrive at the company, saying that it isn't unusual that some members show up a little bit later than is agreed upon, himself included. Since this doesn't harm the overall process in any way, this shouldn't be something to feel guilty about at all. Van der Leeuw also adds to this by saying that there aren't any sanctions within the company, should someone be unable to complete the tasks for a deadline.

Atmosphere

In order to prevent situations like these from having a negative impact on the production process, van der Leeuw thus puts effort into establishing and maintaining this mentality of a flexible schedule, in which every member of the team is now responsible to set their work rhythm based on their own judgement. Regarding this responsibility, van der Leeuw says:

“You know, the workload and efficiency are actually not even that important, since we only have to produce something, and as long as it gets done, it will be fine. So in that way, the 'how' is of much less importance”.

According to van der Leeuw, this mentality has the positive consequence that everyone is able to focus on their production process however they want, so the creative output doesn't get disrupted by other external factors like the pressure of a deadline, or the normative pressure of having unrealistic expectations to live up to.

So rather than worrying whether everyone is actually doing their tasks at the fullest of their capacity, or worrying if someone has produced enough for the day, it is more important to maintain a good social cohesion and informal atmosphere, which currently works out very well in his opinion. When describing the atmosphere within the company as it is, he uses the words “cozy” and “friendly”. Aside from only work, the office is often used for non-work related activities as well:

“Now and then we organize a non work-related activity and so on. That's very important [...] In that sense, we don't strive for a 'professional climate' at all. We do in terms of the final product, but definitely not in terms of acting 'business-like' towards one another”.

This is fairly easy to maintain according to van der Leeuw, since most of the members of the company know one another for a relatively long time, usually from the start of the company. The original founders of the company know one another even longer; Joni van der Leeuw gave the example that he knows Adriaan Jansen for about twenty years by now. These strong ties of course improve the overall social cohesion within the company, and with this, it arguably leads to a better environment for learning, due to the emotional drive and support behind their production, thus also creating a better drive to improve, not just for their own sake but for the sake of a shared goal.

Hierarchy

Aside from the general friendly attitude within the company, another aspect which influences the

active context is the hierarchy within the company. When describing the production process, Joni van der Leeuw already stated that in order to prevent unnecessary distractions, there is a clear division of tasks within the company. The CEO of the company sets out the general strategy of the company, and the creative director sets out the general outline of the game. Van der Leeuw describes this process of setting out the general lines as being non-democratic. The two reasons for this is that from past experiences, it turned out that deciding everything in a fully democratic manner firstly lead to a less coherent end product, and secondly caused the process to take much longer than it actually needed to be due to the time spend arguing with one another. However, in terms of the actual content of the game, everyone does have an equal say, and van der Leeuw says that they try to keep this part as horizontal as possible. What is more, albeit the general outline of the game is decided by Adriaan Jansen since he is the creative director, he is in fact quite open to feedback from anyone within the company. It is often the case that he gets persuaded to change elements of the game, should someone have a better idea. This means that in terms of decisions, some aspects of the process are non-democratic in theory, but in practice it is often the case that this is negotiable since every member in the company can have an influence on this.

Interim Conclusion

From these concepts it becomes apparent that the company has an open mindset regarding mistakes, as well as having a friendly environment in which open communication is stimulated. In terms of the effect of these characteristics on organizational learning, the switch from blaming and shaming to the open, flexible structure of being responsible tends to do a lot of good for the organizational learning processes, since this creates a normative environment in which mistakes are not frowned upon, but are accepted as an inherent part of the process, as well as creating a mentality where these mistakes are being made discussable in order for them to be incorporated into better protocols. The open communication does therefore also improve organizational learning, since this contributes to the discussion of problems, as well as promoting the sharing of information between the different members of the company. These things in combination with the active context create an open environment in which information is accessible in a structured manner, and where the informal atmosphere promotes the flow of information even further. whether these conditions lead to the exchange of information within the cluster depends on the environmental context.

3.4.4: Environmental Context

The environmental context includes all the factors from outside the organization which can have an impact on the active and latent context. In the case of *Abbey Games*, the environmental context mostly includes the other companies within the cluster DGG, as well as the influence of the cluster itself. The environmental context and its influence on the organizational learning processes, and collective learning processes above all, seems to be very significant as well in this case, due to the normative aspects within the cluster regarding the sharing of information in combination with the experience of its impact on the development process. The recurring topics regarding this during the interview were the type of knowledge sharing collaborations already taking place within the cluster, the perceived experience of sharing information, as well as the general atmosphere within the cluster regarding each other as well as the self-image which companies have of the cluster and their combined influence.

Atmosphere Cluster

While looking at the general atmosphere within the cluster, Joni van der Leeuw describes the relationships between companies as being friendly and informal. When talking about his impression of the other companies, Joni van der Leeuw answered that they do not generally see the others as being competitors, partly because of *Abbey Games*' specific types of games but also because of the atmosphere of a shared cause:

“There have definitely been periods in which we had the feeling that we, as a group of Dutch companies, were really achieving something big”.

This shared sense of purpose did increase the overall friendliness towards each other, although van der Leeuw adds the side note that these periods of euphoria were shifting back and forth. This shifting was mainly influenced by the fact that many of the companies within the cluster did not in fact make it, which “didn't really help” to improve the general mood within the cluster.

Norms of Exchanging Information

This friendly atmosphere and openness towards one another had its effect on the sharing of information as well. In the specific case of *Abbey Games*, and in the experience of Joni van der Leeuw, these collaborations between companies usually had an informal character, in the sense that agreements were made, yet these were rarely in the form of contracts, and were mostly build on mutual trust. These collaborations usually took the form of play testing new iterations of their games together, usually by inviting them over, and vice versa. This gives the impression that the collaborations are fairly informal of nature and are based more on convention and respect. Joni van der Leeuw also mentions a specific example during which they briefly borrowed their engine to another company in order to have them use it, but also test it at the same time. Only during this specific collaboration did they make agreements on what was acceptable regarding the use of their engine. Aside from these things, the exchange of information mainly take place sporadically through casual small-talk with one another, although van der Leeuw did not specifically state what kind of information is often shared during these meet-ups.

When asked if there would be any information regarding their company which they wouldn't really want to share, van der Leeuw answers after some thinking that sales and information regarding deals with partners and publishers are generally not shared very often between companies. Interestingly enough, he almost instantly added after this that these types of information would in fact be very interesting, and that this type of information has actually already been shared more commonly in the recent years:

“Ehm, well, sales are always...but those are actually not really a secret anymore at all. But yea, those are usually things which you don't often share with one another [...] Oh and deals. We don't really talk too much about that, but I think that we actually should do that more often. Deals which you have with your partners or publishers: what are the percentages which you get for every sale, and so on. Buuuuut we do in fact talk about that within the DGG a fair bit now that I think about it. Mainly because these are things which we can all profit from. We all have something to win if we would be more open towards one another in that respect”.

This hesitance on saying what kind of topics are not commonly shared here is interesting, since it seems to indicate that not wanting to share information is in fact not a question which is often pondered upon, since he later adds that there isn't really any information which he really wouldn't want to share with other companies. This impression is furthermore reinforced by the the statement that all the companies can in fact win something from this kind of information. All these things seem to have a rather positive influence on the sharing of information within the cluster. However, there are also aspects of this environmental context which do hinder the sharing of information as well.

In terms of how Joni van der Leeuw perceive the exchange of information, there appears to be

something of a tension between seeing it as useful on the one hand, but also seeing it as being disruptive on the other. Joni van der Leeuw does have the impression that overall its helpful, but at the same time, he does consider this as being a distraction to the creative process within the company as well, since most of the collaboration with other companies happens in an informal, unannounced fashion: “The exchange of information is of course very useful, but it can also be a potential distraction”. This has to do with the general culture of openness within the cluster which the DGG tries to promote:

“But that was mainly the culture within DGG: 'the door should always be open'. So that meant we had people from RageQuit or others visiting us on a daily basis, sometimes even multiple times a day. That is of course fun, but at the same time it is also a disruption of the creative process”.

Despite their flexible development method, it seems that DGG's policy of maintaining openness between companies does in fact produce problems from Abbey Games' point of view, since van der Leeuw states that this can be a distraction. Due to his experiences with these things, he claims that albeit the moment on which these small-talks or informal collaborations take place do not in fact take up much time on their own, but the amount of time it takes to pick up the flow of the creative output after these moments is in fact significant enough to be experienced as being disruptive.

3.4.5: Conclusion

From these aspects of the company we can conclude the following. While looking at the aspects of the active context, the beneficial aspects to organizational learning seem to be the use of the flexible method of scrum and agile which allows for the making of mistakes and the process of embedding these experiences in new processes and procedures within the development process of the company. Furthermore, in terms of normative dimensions of the active context, the open and friendly atmosphere improves open communication, which in turn is beneficial for the transfer of information between the different members of the team, as well as allowing room to learn from mistakes and embed these experiences into the members of the organization. The open communication in combination with the responsibility to look for ways to contribute to others does also improve organizational learning since it contributes to the discussion of problems, as well as promoting the sharing of information between the different members of the company.

In terms of collective learning, the combination of the open atmosphere within the company itself, as well as their flexible way of managing the production process allow room for the exchange of information with other companies within the cluster. This is furthermore improved by the fact that a similar open and friendly mindset seems to exist within the cluster, providing no obstacles for learning processes through informal collaborations and the ad hoc exchange of information. This is furthermore backed up by the sense of being part of something bigger. Yet despite the combination of a flexible production process with open atmosphere within the company, the improvisational nature which these exchanges often have nevertheless causes them to be perceived as being somewhat disrupting for the creative process. This perception can unfortunately hinder the exchange of information to some extent.

Chapter 4: Analysis

4.1.- Introduction

In the previous chapters we analyzed the outcome of the interviews with all four companies, filtering out all the aspects of the active, latent and environmental context of these organizations which have an influence on the organizational learning as well as the collective learning as a result of the organizational learning processes. In this chapter these results will be synthesized in order to see which recurring aspects with an effect on the sharing of information can be found. I will argue how the recurring elements are related to the learning processes, and how these elements either improve or hinder the sharing of information within the cluster Dutch Game Garden. These elements can either be considered as recurring aspects of the companies themselves, either in terms of regulative, normative or cultural-cognitive elements, or they can be considered as recurring normative dimensions or institutional logics within the cluster itself.

4.2.- Aspects

4.2.1: Flexible Development Process

One of the first recurring aspect in the interviews with an influence on the sharing of information within the cluster is the method which each company adopted to structure their development process. It was surprising to see how all of the individual companies make use of the scrum and agile method for the development of their games, as well as having the same justification for this, claiming that it is a useful method for managing a creative process, affording both flexibility from their side, as well as allowing for concise justification to and allowing input from their clients. This is arguably a method which is also beneficial from a collective learning perspective, since it allows room for extra activities such as meetings with other companies without leading to major disruptions or setbacks to the development process as the result of having to stick to a schedule set in stone. This method of working in turn allows for the sharing of information, since the most common way of exchanging services or experiences with one another seems to be through informal, unannounced meetings with one another, which seems to be the most frequent form of interaction within the cluster.

4.2.2: Open Access to Information

In terms of how each of the organizations manage their company's memory as well as their general norms regarding the information within their collective archive, there is always the case of open access to most of the information stored, or at least a partial open access. Regarding their project based information stored in the archives, all companies make use of a digital version of an archive, either relying on a platform such as *Trello*, or using a shared GoogleDoc document per project, and this type of information is always shared between all members of the company, regardless of their specific place or job within the company. Although some companies do keep part of their business related information closed off to their employees, most of these things can in fact be asked for should one of the members of the company request this, as the norms regarding the closed off section are described by most interviewee's as being somewhat negotiable. What is more, when it comes to the companies' memories, especially embedded within their employees, the sharing of information is even stimulated through normative responsibilities. This responsibility is a recurring element within the interviews, with most companies trying to stimulate that their members are increasingly aware and actively think about who of their co-workers might needs what type of information from them, in turn promoting the flow of information.

This can arguably be a good thing for the sharing of information between companies within the cluster. In *A Dynamic Theory of Organizational Knowledge Creation* Ikujiro Nonaka describes how there are four steps in which an organization create new knowledge by amplifying the knowledge

already embedded within their employees.⁶⁶ According to Nonaka, these four steps are, socialization, externalization, combination and internalization. The first step – socialization – is tacit-to-tacit conversion, where members of the organization gather and adopt the tacit knowledge of each other through observation, imitation, and practice-by-doing.⁶⁷ The second step – externalization – is the concretization of this tacit knowledge by voicing this through the use of metaphors and dialogue. The third step – combination – involves combining the firm's existing knowledge with the newly gained external knowledge. The final step – internalization – involves the adoption of this combined knowledge into tacit conventions within the organization.

When two companies within a cluster interact with one another, the chances of influencing a company's knowledge spiral, as described by Nonaka, increases. This predominantly happens in relation to the second and third step, where knowledge is obtained through socialization and combined with the already existing body of knowledge embedded within the organization. The fact that almost all interviewees describe how most of the information is considered to be openly accessible to most members of the company, means that this information can also be shared with others, which in turn is beneficial for the exchange of information.

Furthermore, the norms regarding the sharing of information do also improve this, since the recurring institutional logics regarding the sharing of information seem to be that, aside from certain concurrence sensitive information such as future strategies, all information can in fact be shared somewhat freely with other companies.⁶⁸ The only limiting factors here are either NdA's, or the necessity to not weaken one's own market position by sharing sensitive information. Yet despite these things, related to the memory of the companies, exchanging experiences, knowledge or other information is improved by the fact that one, the companies' archives or other forms of active memory is for the majority openly accessible to any member of the organization, meaning that the knowledge is available, should members of the company want to share it, and two, there are very little barriers which prevent the sharing of information between companies, aside from the said NdA specific project information, which prevents the sharing of specific details, yet does not prevent the sharing of general experiences regarding projects, and some of the companies' business part of the organization is not shared freely either, although this is often also presented as being somewhat negotiable in the interviews.

4.2.3: Concentrated Nodes of Expertise

Regarding the team within each organization and their tasks, all game development studios described how they had a very set, clear division of tasks for each of their members, in order to structure the production process and ensure undisturbed creative output. This can be beneficial, as the flexible development process allows for one to learn from their previous mistakes and previous effective parts of the process, in time leading to a concentration of know-how embedded within specific employees. This can be a beneficial aspect from the perspective of collective learning as well, since this not only allows for organizational learning by generating new knowledge, but also affords the possibility to share this.

Specialized knowledge can be helpful during the exchange of information due to the specificity of the information which can potentially being exchanged. This quality of concentrated knowledge embedded within certain individuals can improve learning within the cluster, since this allows for a clear point of address, should requests for certain types of knowledge occur from other companies.

66 Nonaka, I. (1994) *A dynamic theory of organizational knowledge creation*.

http://www.svilendobrev.com/1/Nonaka_1994-Dynamic_theory_of_organiz_knowledge_creation.pdf (06-07-17): p. 14-37.

67 Arikan, A. (2009): p. 659-660.

68 Thornton, P. et al. (2012) *The Institutional Logics Perspectives*. Oxford: Oxford University Press: p. 1-3.

A potential downside of this would be a restrictive normative dimension or hierarchy within the company which would prevent the sharing of information. While looking at the interviewees' description of the social dimension of their companies however, this doesn't seem to be the case at all.

4.2.4: Hierarchy & Social Cohesion

Regarding the normative and cultural-cognitive dimensions of the companies, there seems to be an predominantly friendly and informal atmosphere within the companies, which can arguably be beneficial for the sharing of information, in terms of the flow of information between the members of the individual companies, as well as between the companies amongst one another. This is related to hierarchy within the companies, as this could potentially create regulative and normative barriers which hinder the flow of information. These barriers mainly relate to the perceived difference in status between members of the organization, the perceived penalty for sharing information, and number of sequential links in the communication, as described by George Huber.⁶⁹ However, as we have seen from the companies' mindset toward the regulative and normative dimension of access to the information within the company, there are few obstacles in terms of sequential links in the communication. In terms of status differences due to a hierarchy, all companies explain that there has to be a hierarchy in order to effectively manage the business side of the company. In terms of the normative and cultural-cognitive dimension of this hierarchy however, the organization is still mostly flat.

Furthermore, all companies describe the atmosphere within their company as being informal and overall friendly. Some ascribe this to the type of industry they are working in, and all companies try to actively promote this positive atmosphere. This can have a positive influence on the sharing of information as well. This importance of the social dimension of teamwork related to the processes of learning is addressed by Piet van den Bossche et al. in their text *Social and Cognitive Factors Driving Teamwork in Collaborative Learning Environments*.⁷⁰ In this research, van den Bossche starts off by describing how a team is always more than a group of people in the same space, arguing that social processes within groups can significantly impact team performance. Bossche defines collaborative learning as the creation of mutually shared cognitions, on which the interpersonal context plays an important role on the team performance. Aspects such as interdependence, task cohesion, psychological safety and group potency turned out to be crucial for the engagement in team learning behavior in teams.⁷¹

All this can be of a positive influence on organizational learning in terms of creating an environment in which it is accepted to make mistakes without any negative moral repercussions. Furthermore, the friendly and informal atmosphere ensures that there are no emotional or normative barriers created – in terms of perceived penalties as the result of sharing information with others – which could hinder the sharing of information within the company itself, which in turn can lead to a more open mindset regarding the sharing of information with other companies, as well as the use of knowledge within the company obtained by interacting with other development companies within the cluster.

4.2.5: Personal Norms and Values

A final aspect from within the context of the game development companies themselves is related to the interviewees' personal norms regarding the sharing of information, both inside the boundaries of

69 Huber, G. (1991) *Organizational Learning: The Contributing Processes and the Literatures*. <http://www.jstor.org/stable/2634941> (01-05-17): p. 100-102.

70 Van den Bossche, P. et al. (2006) *Social and Cognitive Factors Driving Teamwork in Collaborative Learning Environments*. <http://journals.sagepub.com/doi/pdf/10.1177/1046496406292938> (06-07-17).

71 Van den Bossche, P. et al. (2006): p. 514-515.

their companies, as well as with other companies inside the cluster. All interviewees claimed that the sharing of information between members inside the company is a good thing, claiming it is something they actively try to promote. When it comes to the sharing of information with other companies, it seems that their personal thoughts on sharing information and personal policy seems to be one of openness as well. This is either directly expressed by the interviewees, claiming that the sharing of information in order to learn from others is something that should be strived for, or is indirectly suggested by the lack of information which they wouldn't share with other companies of the cluster. There are of course limits to this, usually in terms of regulative aspects such as NDA's or business, but when looking at the willingness to share with others, this open mindset is beneficial for the sharing of information.

4.2.6: Friendly and Informal Atmosphere Cluster

These personal norms in turn translate into several shared norms and values regarding the cluster and the position within the cluster, which are mostly related to the emotional connectedness between the involved companies. Regarding the effects of these shared aspects in the cluster, these values and habits overall seem to improve the sharing of information within the cluster. The friendly relationship between the companies is one of the underlying facilitators for the sharing of information. This in turn creates an open attitude towards one another, which according to the interviewees is often expressed in the form of sharing information and aiding one another with small services such as play testing, and offering advice in terms of management of creative processes.

Most of these interactions are on an informal basis as well, since collaboration is in fact promoted by Dutch Game Garden but is not actively facilitated or captured in structural, formal moments other than the incubator program, which is only once a month. According to Chris Bilton, horizontal networks of collaborations do not necessarily happen in a formal manner between creative organizations, but often occur directly through social networks and “third spaces” such as bars, and cafes.⁷² Similar to this, the interviews indicate that these collaborations within the cluster DGG do in fact also happen in this impromptu, improvised manner. These informal meetings take place on a daily basis, as all interviewees describe, and one of the interviewees even claims it is the reason they left the cluster, due to the fact that they had their neighbors visiting them multiple times a day. This in turn means that despite the open development process – which does in fact support unannounced visits like these to be mitigated without causing delays in the process – the informal atmosphere within the cluster can be considered as both something which facilitates the sharing of information, it can in fact also be seen as a hindrance, which does in fact hinder the sharing of information due to its negative connotation.

4.2.7: Norms for Sharing

Despite this partial reluctance toward the informal manner of sharing information, the belief that exchanging information and services is something positive seems to be a shared institutional logic within the cluster. Some interviewees even describe how this process of sharing information is something which should be strived for due to normative reasons. These normative reasons are either described as the moral responsibility which older, veteran companies have toward the startup companies within the cluster, described as being related to respect between companies, or they are described as related to their own duty toward the game industry itself.

Two of the companies described that it is their moral responsibility as veteran companies to share their experience with other companies, either in the form of sharing information on request or in the form of mentorship. One of the companies interviewed added to this by saying directly this has to

72 Bilton, C. (2007) *Management and Creativity*. UK: Blackwell Publishing: p. 45.

do with respect towards one another, for the sake of making friends, and the other three companies seem to suggest this point of view as well. This usually takes the form of doing small services for one another, or doing work for one another for minimal prices. These friendly services in turn have to do with the companies' view on their impact within the gaming industry. Out of all four companies, the two companies fully focussed on serious games both share the view that rather than seeing one another as competitors, it is so much more effective to learn from one another, and with this expand the possibilities of their industry, considering competition something which can happen after all that, if at all.

This normative stance which the veteran companies have towards collaboration with startup companies can be a very effective condition for the exchange of information. The use of this is described by Michael Howard et al. who argue that collaborations between a novice firm and an experienced firm can be of great use for the first.⁷³ In their research the authors claim that by observing routines from an alliance partner, the novice firm can in turn adopt these practices themselves in later projects, which leads them to conclude that collaborations between novice and expert firms are beneficial for learning processes.⁷⁴ This seems to be affirmed by the majority of the interviewees. All of the interviewees talk about the struggle of adapting the creative output of their employees into a coherent process, with two of them mentioning they still consider themselves to be in the process of learning about this. Three of the four interviewees furthermore mention anecdotes in which they either helped other companies with fine tuning their procedures regarding the development process, or they mention situations in which they received help from other companies, which were all perceived as useful. One company furthermore describes how management of the creative process is not an inherent part of most game related educations. All of this indicates that collaborations between novice and expert firms can indeed help through the exchange of information.

Unfortunately, taking advice from other companies with more experience is also perceived as less important by startups, due to the decrease in income due to the time spend on talking with others. Also, a lot of starting companies do not recognize some of the common pitfalls, and their reluctance toward spending time talking to veteran companies about these matters makes it harder for them to anticipate pitfalls which could have otherwise been avoided with proper guidance. One of the companies affirms this by saying it is the reason for leaving the cluster, so they would have more time to focus solely on their own company rather than having an emotional bond with the other companies and carrying the responsibility to help them. The other two companies seem to affirm that not all companies within the cluster view the exchange of information as something positive, since it takes time and they do not always see the need for this. Furthermore, some of the companies seem to only want to take but not contribute something themselves in terms of sharing, meaning this will potentially set bad blood between companies in the long run.

73 Howard, M. et al. (2015) *Learning To Collaborate Through Collaboration: How Allying With Expert Firms Influences Collaborative Innovation Within Novice Firms*.
<http://onlinelibrary.wiley.com/doi/10.1002/smj.2424/abstract> (21-04-17).

74 Howard, M. et al (2015): p. 2093.

Conclusion & Reflection

Summary

I started out this research in order to answer the question what institutional aspects of game developing companies improve or hinder the sharing of information within the cluster Dutch Game Garden. The relevance of this question is related to the situation of the Dutch game industry as portrayed by the research of Dutch Game Monitor in 2015. Many of the new game development companies crash at an early stage, and the figures provided by the DGM indicate that the industry is quite unforgiving despite the overall growth. One of their advices to startup companies was to find ways to collaborate with other companies, or pool resources and knowledge in order to increase their longevity. While reviewing the literature regarding clusters and their benefits, there seems to be the consensus that creative clusters in general can be a suitable platform for collective learning due to geographical proximity between similar companies, making clusters a potential solution for following this advice.

However, there seems to be a gap in terms of academic literature regarding the relation between clusters, collective learning, and game developing companies in particular. Conducting further research to the specific characteristics of game development companies and their influence on collective learning within the context of a cluster would therefore be necessary. These findings could be used for creating better policies in order to mitigate the hindering aspects, as well as to improve the beneficial aspects for collective learning. In order to research this, the object of analysis were four experienced game developing companies from the cluster Dutch Game Garden: *GainPlay Studio*, *Active Cues*, *Sneaky Mammoth* and *Abbey Games*.

In order to answer my main research question, I adopted a theoretical framework which draws upon theories from the field of institutional theory as well as theories from the topic of organizational learning. These theories provided me with the tools to argue how organizational learning within specific game development companies are embedded within specific institutional aspects of these companies, and how these aspects would furthermore influence the sharing of information within the cluster. These theories in combination with the method of grounded theory and semi-structured interviews allowed me to analyze which of the institutional aspects of the four selected game developing companies improved or hindered the sharing of information within the cluster Dutch Game Garden.

To conclude from this, there are several aspects of the game development companies which improve the sharing of information within the cluster. The recurring regulatory aspects of the companies, namely the flexible development process, absence of sanctions as well as plenty of room for mistakes in combination with the normative aspects of openness, and the informal and friendly atmosphere within the clusters, create a suitable environment for the exchange of information, both within their own company as well as with other companies. The overall atmosphere and normative values within the cluster also seem to promote the sharing of information. The relationships between the companies of the cluster DGG are often described as being friendly, there is a general openness towards one another. There seems to be a shared positive attitude toward learning from one another on top of this. Helping each other out seem to already happen on an informal level, usually in terms of sharing experiences and providing small services to one another. The only aspects which can potentially hinder the sharing of information within the cluster are the limitations to the specificity of information which can be shared. These limitations are introduced by the Nda's which companies have to sign for their clients, as well as the notion that sharing information can also be a hindrance. This hindrance is either perceived by the companies in the form of reduced revenues on the short term as the result of time spend on interacting with other companies, or in the form of disrupting the creative process as the result of

the informal and ad hoc nature of these interactions.

Reflection

To answer the main research question which institutional aspects of game developing companies improve or hinder the sharing of information within the cluster Dutch Game Garden, I used the method of grounded theory. I used this method in combination with the theoretical framework consisting of the institutional theory described by Richard Scott as well as the framework of Linda Argote and Ella Miron-Spektor on organizational learning. Richard Scott's arguments on how each institution has regulative, normative and cultural-cognitive aspects provided me with a starting point, viewing the game development companies as well as the cluster of which they are part as institutions, while the framework on organizational learning provided me with the tools to analyses which aspects influenced the learning processes of each individual organization, how the acquired knowledge can be embedded within the organizations, and how these individual aspects formed the foundation for the processes related to the sharing of information within the cluster as a whole.

While looking back on the process of this research, the method of grounded theory proved effective for analyzing the regulative and normative aspects of the interviewed companies, as well as being partially effective in capturing relevant cultural-cognitive aspects of the company related to organizational learning, in turn facilitating arguments how these aspects form the fundamentals for the exchange of information within a cluster. Semi-structured interviews afford the effect of filtering out the regulations which exist but which play a background role. After all, due to the focus on certain topics, rather than working with a set list of questions, the interviewee can steer the conversation within a certain direction, allowing this method to add a focus to certain aspects of each topic. In terms of regulations, this allows for the focussing on the regulations which are most relevant in a certain situation, making this method an effective choice for analyzing the impact of regulations on the day to day practice of the company. Semi-structured interviews are furthermore useful for capturing the normative dimensions of these regulations, since this filtering can partially happen due to the gap between the written regulations on the one hand, and the perceived significance of these rules in the daily practice of the organization on the other.

Interviews can furthermore help to not only filter the significant regulative aspects of a company, but can also be used to capture the tacit norms and values present within a company. By asking which underlying motivation affects the decisions within the company, this method afforded me to form an image of the relevant aspects which have a normative dimension but it also allows for the interviewee to steer this into a certain direction to add to the general direction of the interview and allowing me to find additional norms and values in prior unforeseen directions. This allowed me to argue how these normative aspects justify certain approaches, how they constituted certain relations between the elements of the active context of the company, as well as how these normative aspects influenced the relations between companies within the cluster.

The limitations of this method were however that the cultural-cognitive aspects of the interviewed companies which might influence the learning processes – the structure in which knowledge is embedded, and the influence of this on the sharing of information within the cluster – remain partially unexposed, due to its dependency on the viewpoint and insights of the interviewee. This in turn introduces the difficulty of interpretation, which is inevitable when observing situations within the company and interpreting the employees' reactions to these events. Although the method of grounded theory through interviews is therefore somewhat limited in terms of in gaining insight in the implicit or unspoken emotional reactions of employees in certain situations, it can nevertheless help to gain insight in the directly expressed personal feelings in these situations, therefore making it a viable method.

Suggestions for Further Research

The other limitation of this study is that, while it yields valid insight through the analysis of exemplary development companies within the cluster, it cannot make any claims to generality regarding which aspects of game development companies might improve or hinder collective learning in general. Therefore the results of this research, while providing a solid foundation for further research into influence of certain aspects of game development companies on the process of collective learning within clusters, should mainly be used as a starting point for further and more extensive research.

Further research could either expand on this, by using different methods or a combination of multiple methods in order to complement the limitations of the currently adopted method. Due to the limited use in analyzing the tacit cultural-cognitive aspects, the use of ethnographic research observations in combination with additional semi-structured interviews would greatly improve the representation of aspects with an influence on the sharing of information.

Additional research could also include a larger variety of different game development companies in terms of different phases of their lifecycle. This would allow for a more accurate display of recurring aspects with an influence on the exchange of information, which are present in both startup companies, as well as more experienced and veteran companies alike. This would arguably lead to a more solid claim to which aspects influence processes in which information is exchanged, and thus which of these aspects influence collective learning within clusters.

There are also two more concrete avenues which can be explored in future research on this subject, the first being the installment of formal mentorships between veteran and startup companies, and the second one being the pooling of tools within the cluster. Structuring the otherwise informal communications between companies in the form of mentor groups can potentially improve the sharing of information between startups and veteran companies. As we have seen from the results of this research, there are many aspects which seem to improve the sharing of information within the cluster. Examples of these include the flexible development structure of these companies, allowing for mistakes to be made on the one hand, but also allowing for the incidental spillover of information as the result of informal meetings and conversations between the companies. This in combination with the open mindset of the employees within the individual companies themselves, the friendly atmosphere within the cluster, as well as the openness regarding the sharing of information within the entirety of the cluster, already improves the sharing of knowledge. However, according to two of the interviewees, not every company considers the incidental spillover of information as something positive, either considering it as a distraction and disruption of the creative process, or not considering it worthwhile since it costs time. A potential avenue for further research could thus be whether creating mentorship between one veteran company and one or multiple startup companies could be a feasible option.

A second potential avenue for research which builds on the observations made in this study is the potential of sharing tools between the companies located within the cluster. Once again, the openness, shared sense of importance regarding the sharing of information with the goal of collectively improving the game industry, and the friendly atmosphere seems to promote the idea where companies share their tools amongst one another. These mainly include the knowledge and experience regarding the development process of different projects in the form of a shared and openly accessible database. This seems to be a potentiality since the notion that this information is useful is confirmed by all interviewed companies. The sharing of certain knowledge regarding the development process is either already practiced directly by the companies, or at least agreed upon by all companies as well. This in combination with the situation where information regarding the

process, as well as concrete tools like engines are already shared to a limited extend, would suggest that this is a potential worth exploring.

Appendix

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Images

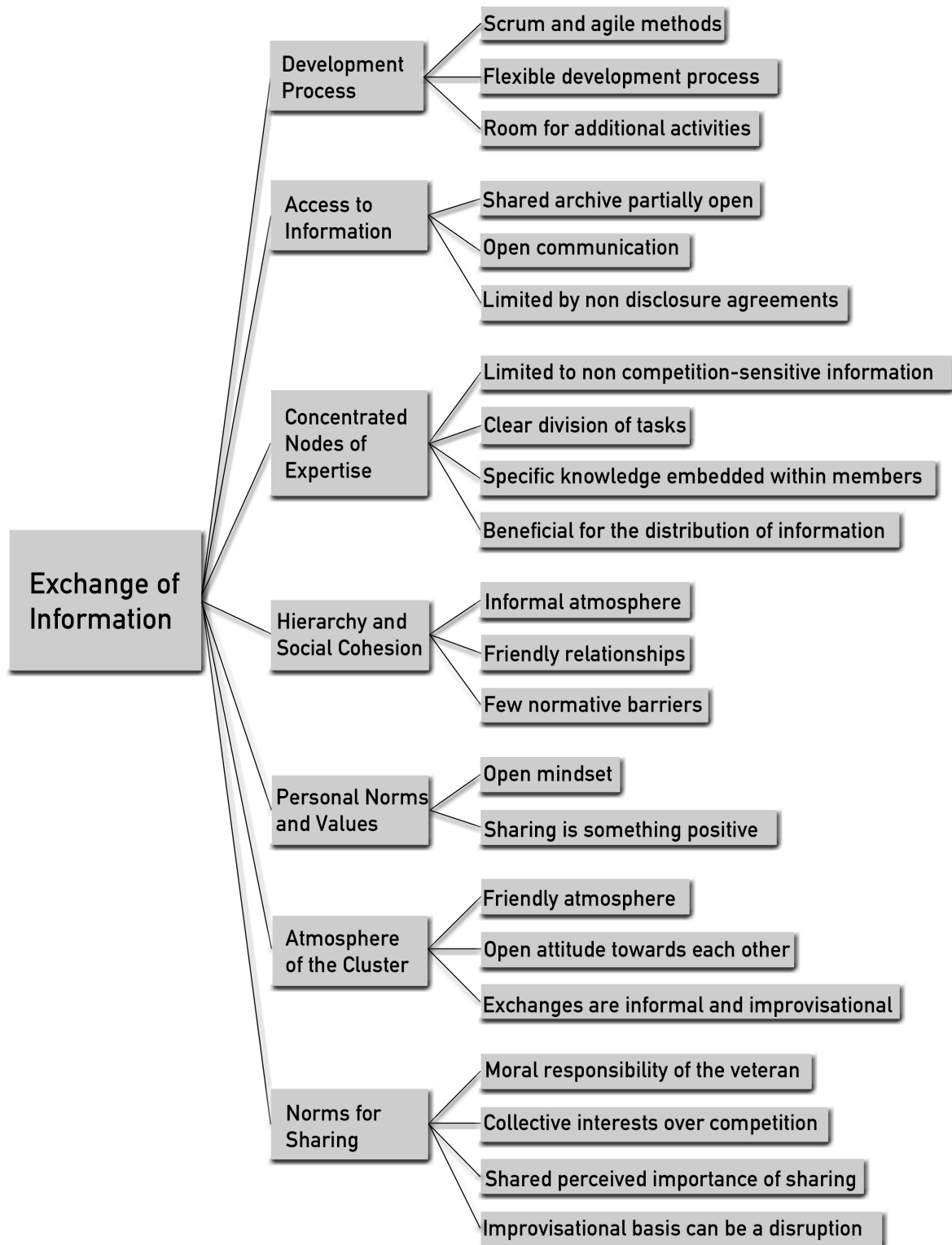


Image 1: The synthesized coding tree of all institutional aspects related to the sharing of information within the cluster Dutch Game Garden.