

## Costs and Benefits of Following Cost Strategies in Value Chains

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**Abstract**--This paper looks into how cost-based competitive priorities affect a firm's upgrading in its value chain. The literature still consider cost-based competitive priorities relevant for firms under diverse strategic positioning, despite recommending contingencies for avoiding shortsighted approaches. It is opportune to understand how that holds under the perspective of Global Value Chains literature, since upgrading is one of its central concepts and represents the dynamic by which a firm is able to reach better positions in the value generation process. Researchers and practitioners have considered this dynamic a way for avoiding predatory competition, reinforcing the dangers of employing short-term strategies when pursuing it. The research question is: *How cost-based strategies interfere in supplier's upgrading in a value chain?* A multi-case study in the Serious Games segment of the Digital Games Industry allows advancing this investigation. These games have purposes other than entertainment, usually focusing on supporting skills learning or acquisition and find applications in very diverse fields. Results suggest that cost based strategies have greater chances of leading a supplier towards upgrading when self-imposed, compared to when derived from the leading firm's guidance.

### I. INTRODUCTION

This paper investigates how cost-based competitive priorities affect a firm's upgrading in its value chain. Cost-based strategies have been considered among generic forms of strategic positioning [13][43] and are usually related to low-price competition [50]. Approached as strictly as that, though, they might induce a short term focused strategy and potentially harm the firm in the long term [1][28]. Differently, the literature has acknowledged that a broader approach is possible and cost strategies remain useful even for firms competing under other strategic priorities [50].

Discussing competitiveness under a Global Value Chains (GVCs) approach leads to the so called upgrading strategies, which have received increased attention as ways for avoiding a predatory competition in the global economy [21][27]. Upgrading represents the dynamic by which a firm is able to reach better positions in the value generation process [18]. When pursuing this, firms shall consider that short-term strategies might configure vulnerable positions [34].

Therefore, it is questionable whether costs strategies, yet useful for market competition, qualify for guiding a firm towards upgrading strategies. Despite a recent discussion around the influences of the value chain strategic orientation over the supplier's upgrading [36][45], the literature on GVCs still remains limited to the influences of the different governance modes on that dynamic [21][23]. Hence, this paper investigates the following question: *How can cost-based strategies drive supplier's upgrading in a value chain?*

A multi-case study with Brazilian firms operating in the serious games segment of the Digital Games Industry (DGI) helps advancing in this research problem. As an example of software industry, the DGI suffers from a set of limitations to the exploration of cost-based strategies [24][51][52]. Despite that, evidences indicate that costs priorities find appeal among those who buy these games [3][4][9][10][57][60].

After this introduction, the relevant literature comes in the following section and, next, an overview on the Digital Games Industry, with a focus on the serious games segment. After that, the paper continues with notes on the methodological aspects of the performed multi-case study and a discussion of the research findings. In the end, a final section resumes the concluding remarks, together with the research limitations and observations on future studies opportunities.

### II. LITERATURE REVIEW

#### A. An operations strategy approach to competitiveness

##### 1. Competitive priorities

Reference [49] is a seminal paper that draw attention to the operational trade-offs that viabilize corporative success, representing the prioritization of one or more key capabilities. The discussion on these trade-offs received great focus since then from the literature and those key capabilities were named competitive priorities [64]. The competitive priorities translate operational decisions derived from the corporative strategy and the clients requirements [62]. Despite semantical differences, a company's competitive priorities comprise four basic dimensions [5][29][64]:

- **Costs:** It is the strategy based on the production and distribution of low-cost products, usually associated to low-prices offerrings [29][65];
- **Quality:** Based in products of superior quality and complying to the pertinent performance standards [29];
- **Delivery:** It is the strategy built upon the delivery performance, composed by delivery speed and dependability [29];
- **Flexibility:** It is a firm's capability for handling varied operational conditions [50], as with difficult and nonstandard orders [65].

Comparatively, these dimensions might differ from each other in their relevance to an industry's competitive dynamic. Different names indicate this, depending on the reference, but a useful understanding comes from distinguishing order-winning from order-qualifying factors [22][50]. While the former guarantee making business in an industry, the last

define the minimum criteria that make clients consider an offer as a possible alternative. Improvements in the order-winning criteria enhance the chances of winning new business, whereas the deficiency in the order-qualifying criteria may impede the firm's activities.

## 2. Generic strategies

Evaluating how a firm can outperform its industry counterparts, [43] indicated the existence of three generic strategic approaches: overall cost leadership; differentiation and focus. The effective implementation of any of these strategies would demand coordinating all firm's functions in line with the chosen strategy. A low-costs position involves relentlessly pursuing efficiency and cost reduction in all the business' spheres, resulting in better margins and advantageous conditions for fighting price competitions. A firm deploying a differentiation strategy is able to offer unique products or services, building a position defensible against price sensitivity. Finally, by targeting a narrow buying group, segment or product line, or geographic market, a company should be able to build a strong market position that combines the previous pure strategies.

Reference [13] focused on the operational issues when addressing the fit among the value chain's strategic orientation and the product offered to the market. The author indicated that value chains well designed to their products differ according to their strategic focus on effectiveness or responsiveness – efficient value chains fit functional products, while responsive ones suit innovative products. As the author pointed out, functional products have characteristics such as stable demand, low contributing margin and long lifecycles. Innovative products, for their turn, are associated with unstable demand, high contributing margin and short lifecycles. Although quality is a common priority to both these value chains, the former emphasizes costs, whereas the later prioritizes delivery and flexibility.

These perspectives illustrate how costs priorities have inspired generic strategic focused strategies, at different levels of analysis. Reference [43] stretched the benefits of low overall costs in meeting increased margins and a strong market position. For his turn, [13] highlighted the necessity of comprehending the firm's product for better designing the value chain. The literature has warned companies about the long-term harming effects of pure cost-based strategies, though. Alternatively, companies should compete by leveraging their unique capabilities and experiences [28][33].

### *B. A value chains approach to competitiveness*

It is opportune to look at the consequences of the previous discussion on competitiveness for the Global Value Chains (GVC) literature. For researchers and practitioners, the GVC perspective has offered an increasingly popular framework for analyzing the international expansion and the geographical fragmentation of the value generation process [21]. Its lenses embrace globally spread and interconnected businesses, activities and relationships, spanning from the

early products and services conceiving to their final use [19][61]. The GVC framework emphasizes the connections among consecutive activities in the value generation process, the power distribution along the different connected players and the institutional environment relevance [55]. Particularly, the previous discussion shall affect the upgrading concept, one of the GVC's centerpieces and a possible way for avoiding the low road in the international competition.

## 1. Upgrading in value chains

Central to the literature on GVCs, finding a way into high-valued activities is essential behind the upgrading discussion, which represents the acquisition of capacities in those domains [35]. Upgrading represents the dynamic by which a firm is able to reach better positions in the value generation process [18] and upgrading strategies have received increased attention as ways for avoiding a predatory competition in the global economy [27]. Unlike changes related to routine efforts, for instance, it is useful to consider that upgrading should be accompanied by [14]: (i) changes in the firm's competitive position; (ii) improvement in the firm's competences or; (iii) in the firm's power conditions. Generically, it occurs generically as [23]:

- Process upgrading: better efficiency from the reorganization of processes or the introduction of superior technology;
- Product upgrading: changing into more sophisticated product lines, with a repositioning in the suppliers hierarchy;
- Functional upgrading: changes in the set of functions performed in the chain, assuming more relevant ones;
- Inter-sectoral upgrading: applying competences acquired in a certain function to operate in a new industry.

The intangible component is greater from product to inter-sectoral upgrading, so product and process upgrading are simpler, whereas functional and inter-sectoral upgrading are of difficult seizure [27]. Further, the literature currently acknowledges the complexity of the possible upgrading trajectories, rather than the previously defended linear path [19][59].

## 2. Upgrading determinants

### *a) Chain Governance*

Despite participating in GVCs is pointed as a leveraging factor for the development of companies, there are no immediate effects [23][41]. In fact, the literature have investigated impacts from chain governance on the knowledge diffusion and upgrading opportunities available for the companies engaged in GVCs [17][23][42][46]. Although in some cases this accelerates the supplier in the available upgrading routes, in other cases the leading firm exercise active opposition to such developments. Buyer's resistance in transferring control of high-valuing activities or the need for specific investments represent some of these obstacles.

Governance Types	Leader's role in supplier's upgrading	Supplier Upgrading Expectations
Modular	Spectator e final evaluator	<b>Process:</b> developments aiming to technical and standards complying and chain permanence
Relational	Collaborator	<b>Products and Processes:</b> developments aiming to better attending the leader's needs <b>Functional:</b> possibility of developing competences that are complementary to those of the leader
Captive	Intervenor	<b>Products and Processes:</b> developments aiming to risk reduction

Fig. 1 – Relationship between governance and upgrading. Adapted from [42]

According to [20], governance patterns gradually evolve from market based transactions to the vertical organization. These patterns emerge from the combination of:

- The transactions' related knowledge complexity;
- The information flow standardization degree;
- The current and potential suppliers' capacity.

The Fig. 1 resumes the effects of some governance types over the upgrading in GVCs – different governance structures relate to varying roles for the leader, as well as correspondent expectations for the suppliers' upgrading. Reference [20] described the governance modes listed in Fig. 1 as:

- Modular: products are made to customer specification, by suppliers who take full responsibility for the needed skills but remain limited by standardized technology;
- Relational: complex relationships often presenting mutual dependence and high asset specificity, sustained by proximity, trust and reputation, or even social ties;
- Captive: small suppliers are dependent on large buyers, face high exchanging costs and often undergo high levels of control and monitoring.

*b) Operations strategy*

Besides the consequences of governance to the upgrading opportunities, additional indications also suggest a relevant role for the value chain's strategic orientation in this discussion. [40], for instance, defended the cautious evaluation of the suppliers' upgrading, after investigating Turkish automotive suppliers. He observed that the registered upgrading occurred in line with an imposed responsibilities redistribution, deployed by the leading firm. Similarly, [45] indicated that the buyer's valued competitive attributes could affect the suppliers' upgrading. The resulting direct or indirect guidance would guide these companies' resource and competence prioritization, representing the reflex of the leader's own strategic choices [6].

III. SERIOUS GAMES AS A FIELD OF STUDY

*A. Digital games industry overview*

The Digital Games Industry (DGI) have long expanded from a niche of consumption and is currently among the major entertainment industries [12][25]. For instance, the

cumulated revenue of games-related software and hardware (about US\$ 96 billion) surpasses those of the movies industry (about US\$ 88 billion) [8]. More so, the global reaching of both the hardware and software GVCs characterizes this industry's truly global profile [25].

London and Paris were the first locations to share the USA's and Japan's historical leadership in the DGI, but even now few technological clusters take the global lead [7][15]. Apart from those regions, groups of contenders and new entrants also seek their market share in this industry [47]. In Brazil, developers still lack industry representativeness and connections to the GVCs [15]. In spite of that, the country has great potential and respond for the largest market for digital games in Latin America. It accounts for 35% of regional revenues [56], reinforced by predicted consistent high growth rates [44].

*B. The serious games segment and its value chain*

According to specialists, casual games is one of the segments with the major opportunities for Brazilian developers in the digital games industry, because of its yet maturing and low-saturated markets [15]. In the absence of a single definition for serious games, it is useful noticing that these games usually focus on supporting skills learning or acquisition [16]. They are more frequent in the military, healthcare, corporative and governmental environments than in schools, though, due to the inertia of this field, difficulties for evaluating the resulting learning, and the high associated costs [60].

Along the possible learning enhancement, the capacity for competing in costs with traditional alternatives appeals to the diverse public that consider using these games [3][10][57][60]. The utilization of "off the shelf" games with serious purposes also indicates the existence of a mass market for this applications, whose buyers seek alternatives to the high development costs and the scale necessary to make "on demand" games viable [4][9]. Indeed, a broader use of serious games lean on the reduction of its development costs and efforts to deliver sophisticated solutions within the limitations of the available technology [10][16][60].

The serious games value chains conjugate different market niches and are not so clear than those of the more conventional ones. Three groups of actors interact in these

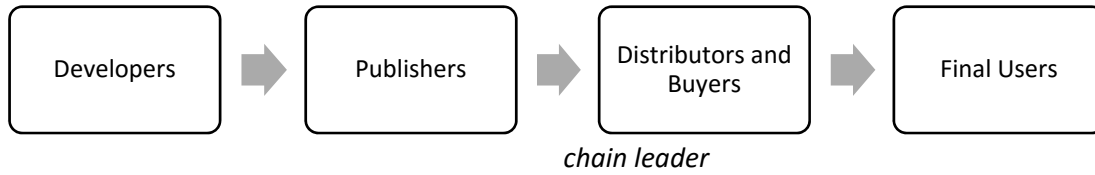


Fig. 2 – Serious Games Value Chain. Elaborated from [53]

chains, as indicated in the Fig. 2: developers, publishers and distributors. Developers produce, or customize, serious games’ content to the particularities of a variety of channels and customers. Funding for publishing and marketing the games comes from Publishers, which can internally develop the games as well. Beyond that, serious games may or may not follow conventional retailing distribution, whereas distributors often assume the buying role as well.

From a governance perspective, the buyer is the chain leader and the governance follows relational outlines, according to the typology presented by [20]. Most of this segment operates under a project-based regime, for the newness of this segment and the specificity of its applications [53]. Each project represents an experimental process, where developers learn customer’s necessities while these explore the games’ potential, impacts and application possibilities. Transactions’ complexity is high, as well as the developers’ competences, and these firms face highly no standardized demands. Transitioning from a project-based model to one of multiple sales or reutilization of engines, techniques and assets, for instance, is considered critical to developing sustainable businesses [53].

C. Propositions development

The upgrading concept connects the literatures on GVCs and Innovation, and the terms upgrading and innovation are often used interchangeably [26][34][66]. Besides uninvestigated causalities, it is recommended understanding upgrading as the increment in the added value, following an innovation [34]. Behind this, the risks of relying in simple cost reductions for increasing a firm’s per unit value indicate shortsighted approaches. This echoes the discussed recommendations for approaching cost-based strategies through distinctive capabilities and unique experiences [28][33].

As for software-based industries in general, companies in the DGI’s serious games segment suffer limitations to deploy costs-based priorities as they differ from the most traditional ones for not having a physical product. Their costs come essentially from work – initially associated with development activities and, later, with users support [52]. Yet, costs do not depend on production volume [48], but scale economies do exist in task repetition [51] and in improvements in the way of working [52]. Finally, productivity can be harmed when under increasing requirements’ complexity and functionalities’ flexibility [24].

From this, cost reductions in software-based industries possibly follow more sophisticated competence

rearrangements than it would be in traditional industries. The complexity of carrying forward such strategies suggests that they might not timely answer to the chain leader’s pressures – hence, generating crude price-based competition. In these terms:

- P1. Cost-based priorities do not drive supplier’s upgrading if derived from the leader’s strategic pressures.
- P2. Costs-based priorities drive supplier’s upgrading if self-imposed.

The Fig. 3 brings the conceptual model, indicating how the stated propositions suggest that cost-based priorities differently affect a firm’s captured value. The dashed lines are illustrative for the firm’s internal costs and its product’s price, so that the distance separating them indicates the absolute value captured by the supplier. The arrows accompanying propositions P1 and P2 – in the circles – indicate the consequences of cost-based priorities. Those self-imposed result in better value capture, expanding the value captured by the firm through lower internal costs. The same does not hold for cost strategies derived from the chain leader, which induce cost reductions for enabling lower market prices – the leader gets the released value.

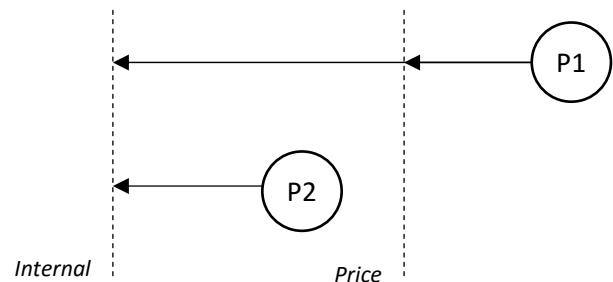


Fig. 3 – Conceptual Model. Authors’s own

IV. METHOD

A. Construct operationalization

A semi-structured questionnaire for this research derived from previous studies borrowed from the revised literature. Governance was operationalized with the items proposed by [2] for the model of [20]. Upgrading operationalization followed a set of items refined from a comprehensive review of the literature pertinent to both upgrading in value chains and the digital games industry. Competitive priorities were operationalized in line with the items presented by [62].

*B. Research design*

Choosing case study as research strategy is opportune because of the exploratory characteristics of this research, involving contemporaneous phenomena whose relevant variables are not subject to the researcher's interference [67]. Following a retrospective timeframe enabled conducting a privileged sampling for selecting relevant cases [11][63]. The cases came out of a list of participants of a comprehensive survey conducted among Brazilian game developers by the Center for Policy and Technological Management of the University of São Paulo (NPGT-USP) in 2014, enriched with suggestions from industry specialists. The ease of access; the association among the answers of the companies to the survey and the evaluated upgrading indicators; and the specialists' opinion about the companies made the major criteria for selecting the cases. Final sample comprised two firms, henceforth referred to as SERIOUS1 and SERIOUS 2.

*C. Data collection*

While interviews were the main data source for this research, two additional sources allowed triangulating the collected primary info. In more detail:

**1. Semi-structured interviews**

A key person was interviewed in each company – a founding partner and a co-founding senior manager. Because of the strategic nature of the topic, the need for a historical perspective and the firms' very small managerial bodies, these were considered satisfactory informants. For digging into upgrading' stories, more than identifying events, questions involved open-ended inquiries about the most emblematic strategic changes in companies' history, the strategic orientation of such changes and the actors that affected them. Interviews lasted about 60 minutes and were recorded with the interviewee's permission, with verbatim transcriptions carried out within three days [32], and were enriched with notes brought from the field [31].

**2. Specialized media and Companies' websites**

Articles about the sampled firms were collected among websites specialized in business news concerning games and technology. This searching intended gathering information on the strategic relevance of upgrading events reported in the interviews, as well as additional circumstances that could complement those retrospective narratives.

**3. Industry Event**

At the beginning of fieldwork, one of the researchers attended to a major national event dedicated to the digital games industry. This provided occasion for interacting with diverse business and institutional actors of the industry, and collecting information about the characteristics and dynamics of the investigated value chains.

*D. Data analysis*

Data analysis was broken into within-case and cross-case steps, overlaying data collection and analysis in order to make this a continuum process [32] [63]. Within-case analysis focused on identifying and contextualizing critical events in companies' trajectory that characterized upgrading. Interviews' data was coded within categories derived from the pertinent literature and summarized for verifying understanding. Drawing case narratives made possible identifying critical events in firms' trajectories, which were triangulated with secondary data gathered from industry publications and companies' websites – a procedure that allows reducing biases of retrospective studies [30][31][67]. Matrix displays backed cross-case analysis, comprising comparisons and contrasts between cases in search of supporting evidences and emerging commonalities [32].

V. RESEARCH FINDINGS

*A. Cases overview*

**SERIOUS1.** Company SERIOUS1 has now operated for almost five years in São Paulo (Brazil), whereas its founding partner had already worked in big players of the industry before this period. The company started developing advergaming and serious games, finding exponential growth in its early years and counting multinational companies among its base of customers. SERIOUS1 is now diversifying its operations with activities in the traditional games segment, with authorial IP, and expects to meet annual earnings of 1.5 million reais, while also searches for a way into the international markets. SERIOUS1's team has between 10 and 30 people, with 65% of technical employees.

**SERIOUS2.** Company SERIOUS2 started operating with services broadly related to eLearning about teen years ago, a focus that the company narrowed to game-based learning after three or four years of activity. Despite further changes on the way, the company's business model retained this focus on serious games and, more precisely, on serious games for corporate training. SERIOUS2 currently make about one million reais yearly and operates mainly in the domestic market, with a team with less than 10 people – 45% of them devoted to technical activities.

*B. Upgrading in value chains*

Analyzing the critical events in the companies' history made possible identifying events that classify for upgrading categorization. The initial upgrading indicators gathered from the literature went through adaptations for the cases' specificities. The following discussion intends to evaluate the presented propositions building upon the case studies.

**1. When cost priorities derive from the chain leader**

Slightly different from the preliminary expectations, cost-based strategies did not stand among the major strategic directives for the companies participating in the research. Costs strategies were not absent, though, and it was possible

to observe how the case companies interacted with it. Indeed, cost priorities did not appear as differentiating priorities, representing rather qualifying criteria. According to SERIOUS1' Partner: "...costs might be secondary, but they are relevant to all the [games] segments in different levels".

An important part of the selling process is the negotiation for fitting the game development costs and the client's budget. In the end, though, the aspects of quality and flexibility represent decisive factor for the buying decision. For SERIOUS1' Partner, a client decides based on "...[developer's] capacity for transforming the client's demand in (...) a viable solution". In addition, he states, "technically, things have to work" and "the graphical aspects are very relevant, because graphics are what people notice (...) – if we have a strong art team, we start winning a lot".

Similar circumstances represent the case of SERIOUS2, whose Senior Manager indicates that it is the firm's responsibility to "...adequate the client's budget and the game mechanics". In spite of that, the differentiating factors relate to flexibility competences and games represent a product "...100%, well... 100% is impossible, but very adherent to the [client's] demand", in the words of the SERIOUS2's Senior Manager. About quality, depending on the game, the company is capable of "turn it [i.e., the game] into a test field; you can put the participant in an everyday situation, thus being able to make it like a simulation of his real environment". The more strategic is the client's demand, more reasons it has to choose a game instead of the traditional alternatives for delivering its training.

Despite only qualifying, those costs priorities still affected the investigated companies and resulted in changes that did not qualify for upgrading. The major example that illustrates this comes from SERIOUS1 and relates to the maturation of its development strategies, by adopting a modular design for its game solutions. With this development, the company qualified for exploring markets that demanded yet lower total costs, still mostly aiming for flexibility and quality. SERIOUS1's Partner indicates that now "...we have almost a game template (...) and the team can quickly adapt it; hence, we can reduce the price and make it like in a production line". In different industry publications, one finds supporting statements from him. In 2015 he said to one of these publications, for instance, that "our strategy was to take over projects with instantaneous return and, gradually, also produce one or another authorial game". Another publication from 2013 reports how SERIOUS1 took to exhibition game fair a project conceived and developed in just a couple of weeks. Changes in game production process indeed reduced firm's costs, but those cost reductions were transferred as reduced prices to more price-sensitive clients.

Cost priorities affected SERIOUS2 in yet different conditions. This company, for its turn, faced problems with the market shrinking that accompanied the depreciation of the economic conditions of its domestic market during the last two years. Differently from SERIOUS1, this firm concentrate its operations exclusively in serious games from its

foundation and, consequently, suffer direct impacts when its corporate customers undergo financial difficulties. This situation did not result in any sort of operational changes that could improve SERIOUS2's competitiveness, though. Otherwise, the company relaxed its commercial practices. Formerly devoted to big – and expensive – projects with multinational companies, it became less rigid with its market positioning, as SERIOUS2's Senior Manager pointed out: "...as the market has changed a lot in the last two years, we have also adjusted ourselves. Thus if the client says 'I wish a simpler solution' – Ok, we will make a simpler solution. So we are only not restricting...". One can notice the slowdown of SERIOUS2's market by verifying that the last time some relevant firm entered the company's customers portfolio was at the end of 2014.

Even the situation of SERIOUS2, which performed commercial rather than operational changes following the renewed strategic pressures aligned with cost strategies, reinforces arguments on the difficulty for reaching upgrading under these circumstances. Following these considerations, together with those discussed about the case of SERIOUS1, there are suggestions for accepting Proposition 1.

## 2. When cost priorities are self-imposed

SERIOUS2 is illustrative for the case of self-imposed cost-based strategies, but a preliminary discussion is necessary before getting there. The previous section highlighted how flexibility and quality are components of differentiating strategies for the studied companies and it is interesting to look deep at the consequences of this. The process of game development might demand large teams, provided it is a complex process, with many different steps. According to the SERIOUS2' Senior Manager, a game developing team amount to at least 10 people – a game consultant, a scriptwriter, a game designer, a graphic designer, an illustrator, a couple of programmers, someone for conducting quality assurance, someone to handle publishing and a project manager, "not including specialists for sound, animation, storytelling...".

In addition, the related technological challenges can be very diverse, since "...a game can be based in Flash, can be based in HTML5, can be made for iOS, can be made for Android, can be made for notebooks (...)". The SERIOUS2' Senior Manager also underscores that "there are the languages for programming the game – there is the front-end language and there is also the back-end language, so... we have a dot-NET server, another one in PHP, another one based in Oracle and still another one based in MySQL". The client's own infrastructure represents additional complexity, because "...in the corporative world, computers and software are old (...) sometimes the company is a multinational and needs to call for an international update... so the [update] process is slow and there is no actual reason to keep updating (...) if everything is working". In spite of that, "...with the adoption of tablets and smartphones, everyone wants to be in the street... they want (...) a solution that runs everywhere".

In such scenario, resource management is critical for company' ability to offer competitive solutions in line with the level of flexibility demanded by the market. It is no surprise, thus, that SERIOUS2 counted on a large team of collaborators in the past. To a national newspaper, one of SERIOUS2' partners revealed in 2008 that the company went from seven (7) to 35 collaborators in less than a year. The Senior Manager acknowledged that a team capable of dealing with that diverse market demands might become impracticable, since project allocation is made of punctual activities. The firm reached a satisfactory flexibility level as demanded by the market, but started having problems for managing its own internal costs – that is when it undergone deep changes.

The alternative for a full team came in the form of a gradual outsourcing process, at the end of which the company only kept in-house the creation process, with a team of less than 10 people. As the SERIOUS2's Senior Manager emphasizes, "...creation is constant; there is creation in every project and it is the same team (...)". This dramatically reduced the problem with resource management – in fact, "...[the creation team] is able to attend two, three projects simultaneously" – and he determines that "in the end it is cost optimization... there is no other reason".

The company outsourced all the steps after the initial creation phase and it now depends only on its project managers' capacity to deliver its products. This is indeed a relevant consideration, for which he included that since "...we outsourced the last internal developer, we decided to divide this [project management] task among two people". SERIOUS2 now relies on a team with less than ten people, two of which dividing project management tasks – "...one project manager and one game producer (...); [they are] two managers handling production, but we put one of them more focused on the clients, in attending, and the other more focused on the outsourced team".

The Senior Manager also recognized the importance of keeping internal technical knowledge about the product, because "...it is important that I understand technical limitations, understand which the budget restrictions are, for not generating an unrealistic project". A relevant aspect is that "the production manager, even me [the Senior Manager], we have a strong technical background, so, a large experience; thus we went through a lot of problems and nowadays we already know how to attend [the project's demands]".

Despite only SERIOUS2 supported discussing the second proposition, it made a compelling case for understanding how a game developer can reorganize its business model for improving its participation in the value generation process. By going through its outsourcing process and understanding the critical knowledge to keep in-house, the company evidenced a successful functional upgrading. From this, acceptance of Proposition 2 is recommended.

### *C. Making sense of the cases*

If the governance represents the channel for a leader affect the supplier's upgrading in the value chain [27][58], the chain strategic orientation might reveal the content of this influence. The presented propositions allowed discussing how cost-based strategies affected a supplying firm, depending upon the origin of such strategy. As anticipated in the Proposition 1, cost-based priorities derived from the chain leader's pressures did not led the supplier to upgrading. SERIOUS1 only performed regular changes, not upgrades, and the firm repassed them to the clients as lower prices. SERIOUS2 choose not pursuing operational changes, nor upgrades, when facing a more cost-oriented environment. Instead of that, the company adjusted its commercial processes to attend a broader base of clients.

The results are different when costs priorities are self-imposed, as noticed from the case of SERIOUS2, which proceeded as advanced in the Proposition 2. Facing difficulties for keeping its resource utilization under control, the firm decided to put in practice an outsourcing plan and ended up with only the creation process in-house. As a byproduct of this decision, the firm enhanced the flexibility of its services because of the possibilities of reaching out different outsourced developers on demand.

Together, these cases contribute to extending operation strategy's debate on cost-based priorities to the GVCs literature. Confronting pure and mixed strategies, [33] postulated: "companies can be hurt by a sharply specialized strategy that has key gaps". [28] indicated that competitors could easily emulate low costs and dispute price leadership, threatening firms that over rely on these competitive tools in spite of developing distinctive capabilities. Costs priorities still have a place in a firm's strategy, though, as [51] noticed.

By implementing short-term strategies in order to leverage market opportunities (SERIOUS1) or overcome market difficulties (SERIOUS2), the studied firms did not find their ways into value chain upgrading. The conquered advantages were temporary and easily imitable. By developing unique capabilities in coordinating a largely outsourced development team, while retaining critical knowledge in-house, SERIOUS2 performed a very valuable upgrading.

## VI. FINAL REMARKS

Understanding how strategy affects the competitiveness of a firm is a debate that find relevance among researchers and practitioners. GVC literature points out to upgrading as a relevant way for a firm to reach better positions in the value generation process and avoid crude price-based competition. The discussed cases allowed observing that the debate on the benefits and traps of cost-based strategies also reverberate in the GVC literature. Cost-based priorities have their value when accompanied of capabilities development, and the difficulty of pursuing this suggests that those strategies have greater chances of leading a supplier towards upgrading when self-imposed.

As the discussed cases represent companies with small operations, developing games for large clients, this asks for further studies exploring this paper's argument in order to understand results' transferability. In particular, it is interesting to ask whether firms producing regular goods would undergo similar upgrading patterns. Such reasoning has good prospects, though. Despite the word "global", GVC framework has been well explored at local, regional and national scales [54], with applicability in different industry settings [21].

The number of cases, the number of interviews in each firm and the lack of quantitative data stand among this study's limitations. Further research should overcome these weaknesses, as well as deepen the discussion with cases in other industries, particularly ones in which cost-based strategies represent order-winning competitive factors, because it was not in the cases herein recounted.

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