

Market Forces: Playing with Risk in Business Planning for Games

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Abstract: Business planning within undergraduate games programmes is frequently taught through lectures, worksheets and written submissions. Strategic decision-making in indie games studios, however, is inherently systemic, shaped by studio identity, founder capability, market conditions and constrained resources. While students can often articulate concepts such as market positioning, resource allocation and marketing strategy in isolation, they may struggle to understand how these elements interact under uncertainty. This paper presents Market Forces, a tabletop serious game designed to make these interdependencies visible and negotiable within a Business Planning for Games module in a BA Games Design course. The game places students in studio leadership teams and asks them to respond to industry risks such as funding delays, market saturation and operational strain. Decisions are evaluated through a mitigation test requiring alignment between studio identity, available strengths and chosen strategy, with viability gained or lost according to the coherence of the group's reasoning. Drawing on experiential and social-constructivist principles, this intervention allows students to experiment with real-world trade-offs in a psychologically safe environment while embedding evaluative criteria directly within gameplay. Implemented within undergraduate classroom delivery, practice-based observations suggest that students engage more readily and collaboratively in negotiated strategic reasoning and demonstrate clearer alignment between studio identity, capability and decision-making than in previous seminar-style iterations. This paper contributes practice-informed insight into serious games for professional skill development and demonstrates how purpose-built interventions can embed the practical demands of early-stage studio planning within games design curricula.

Keywords: Serious games, Game-based learning, Business education, Experiential learning, Business planning for games

1. Introduction and Problem Statement

Business planning forms an important component of many undergraduate games design programmes, where students are commonly introduced to concepts such as funding, marketing, audience identification and project management before applying these through business plans, pitch documents or strategic reports. Within games education specifically, business planning is often framed around the development of studio concepts, audience positioning and sustainable production models, with attention to the ways in which creative, technical and commercial decisions intersect within early-stage projects (Buckingham, 2024). While such activities provide valuable opportunities to engage with key aspects of commercial practice, they also risk presenting business management as a process of applying discrete concepts to discrete problems. However, decisions concerning funding, scope, staffing or audience development are rarely independent of one another, with strategic choices shaped by organisational capabilities, resource constraints and changing external conditions. In practice, this interdependence is particularly pronounced in small or independent studios, where decisions concerning scope, funding and audience positioning are closely coupled and must often be resolved under conditions of uncertainty and constraint (Buckingham, 2024).

The resulting challenge is not simply one of knowledge acquisition; management education has long emphasised the importance of decision-making, judgement and critical thinking in professional practice, particularly where learners must respond to complex situations rather than apply fixed answers (Salas, Wildman and Piccolo, 2009; Lovelace, Eggers and Dyck, 2016). Questions therefore arise regarding how opportunities for strategic reasoning can be incorporated into learning activities. This is especially relevant to business planning for games studios, where more than one response may appear viable and where the appropriateness of any decision depends on the wider context in which it is made. Such concerns have contributed to longstanding interest in business simulations and management games as environments in which learners can engage directly with the kinds of challenges associated with professional practice (Keys and Wolfe, 1990; Faria *et al.*, 2009; Lopes *et al.*, 2013). Subsequent work has extended these discussions into areas including leadership development, professional competency assessment and serious game design, drawing attention to the ways in which gameplay structures

can support decision-making, reflection and collaboration (Carvalho *et al.*, 2015; Busari, Yaldiz and Verstegen, 2018; Bijl *et al.*, 2024). This work therefore presents a design case of Market Forces, a tabletop serious game developed for an undergraduate Business Planning for Games module. Related Work: Theoretical Foundations

Business-planning education presents a specific pedagogical challenge because students may understand funding, audience development, market positioning, scope and resource allocation when these are introduced separately, yet still find it difficult to determine what follows when these considerations must be combined within one viable studio proposition. A decision about audience affects scope, scope alters production demands and staffing and those decisions in turn influence cost, risk and the room available for revision. Strategic planning therefore depends on judgement across interdependent variables rather than the accumulation of isolated knowledge, which is one reason management education has consistently associated professional learning with decision-making, critical thinking and the capacity to respond to complex situations rather than apply fixed answers to bounded tasks (Salas, Wildman and Piccolo, 2009; Lovelace, Eggers and Dyck, 2016). More recent work supports position while showing that simulation-based learning depends heavily on design and scaffolding, with educational value shaped by the forms of reasoning an activity elicits rather than by activity or immersion alone (Chernikova *et al.*, 2020; Faisal *et al.*, 2022). Lainema and Lainema (2007) argue that dynamic simulation environments support learning because they help students understand relationships within business systems rather than simply absorb content about them, while Ranchhod *et al.* (2014) associate educational value in their use of management simulations with the interaction between experience, conceptual understanding and skills development. This is consistent with accounts of games-business practice that emphasise the iterative and contingent nature of studio decision-making, where planning is shaped as much by emergent constraints as by initial strategy (Buckingham, 2024).

Educational usefulness does not necessarily depend on reproducing professional reality in full detail and serious games frequently derive value from preserving relationships that are instructionally significant while reducing forms of complexity that would otherwise obscure them (Kuipers *et al.*, 2019; Risley *et al.*, 2025; Rogers *et al.*, 2022). In a business-planning context, greater detail may increase surface realism without making strategic logic easier to inspect. Educational design can therefore be understood as balancing situated relevance with broader transferability (Chen and Hung, 2002), which is directly applicable to Market Forces because the game situates decision-making within recognisable studio identities, constraints and risks without attempting to simulate the games industry comprehensively. The resulting activity is abstracted without being detached and situated without requiring high-fidelity simulation.

Activity-theoretical perspectives treat tools, rules, community, division of labour and contradictions as constitutive features of learning, with development emerging through participation in systems shaped by tension, mediation and competing demands (Engeström and Sannino, 2010). Carvalho *et al.* (2015) extend this further into serious games as activity systems in which gaming activities, learning activities and instructional activities are closely intertwined, so that educational value emerges through the alignment between what players do, the structures shaping those actions and the purposes those structures serve. Strategic business planning fits this framing closely because decisions concerning growth, sustainability, creative ambition, risk tolerance and resource allocation are shaped by conflicting priorities and alternative interpretations of what counts as an appropriate response. Business and leadership games have often been valued because they provide lower-risk environments in which participants can experience the implications of decisions while engaging in discussion, reflection and collective evaluation (Lopes *et al.*, 2013; Busari, Yaldiz and Verstegen, 2018), while related work on collaborative serious games has shown how shared problem-solving environments can support negotiation and the co-construction of meaning around organisational problems (Gomer *et al.*, 2025). Strategic competence therefore includes the ability to evaluate alternatives, justify actions and respond to uncertainty, with the processes through which those judgements are formed becoming central objects.

Learning transfer would also appear to matter in two interlinked ways: students need to recognise similarities between the strategic reasoning required in the game and the reasoning required in formal business planning and they need to carry forward that reasoning beyond the immediate play context (Perkins and Salomon, 1992). This is consistent with work on management simulations showing that their value lies in requiring learners to analyse situations, weigh alternatives and justify responses in ways that support critical thinking rather than participation alone (Lovelace, Eggers and Dyck, 2016). Crookall (2010) emphasises the role of debriefing and interpretation in turning simulation activity into something more durable and usable and more recent serious games work concerned with leadership and feedback likewise suggests that educational value depends on how challenge, consequence and reflection are built into the activity itself (Risley and Buzady, 2022). In Market Forces, this work is embedded directly within play through a mitigation test, a reality checker role and a viability

system, each of which requires proposed actions to be explained and judged in relation to risk, capability and studio identity before the round can be resolved.

2. Designing Market Forces

Market Forces was developed for use within an undergraduate Business Planning for Games module, responding to a recurring observation from teaching staff that while students were generally able to demonstrate understanding of individual business concepts, they often found it more difficult to apply those concepts collectively when confronted with broader strategic problems. This separation contrasts with the realities of games studio practice, where these elements are typically negotiated together and where decisions in one area rapidly constrain options in another (Buckingham, 2024). Play is structured as a semi-competitive activity in which teams aim to retain the greatest number of viability tokens across the five rounds, although the primary emphasis remains on discussion and reasoning rather than winning. Decisions are evaluated through a combination of peer challenge, via the rotating reality checker role and facilitator oversight, with outcomes determined through group justification rather than fixed solutions.

The game was implemented within a second-year undergraduate Business Planning for Games module with a cohort of 30 students. Sessions were structured around small groups of four to six, with each group completing five years (rounds) of play over a 60 minute session. The activity was facilitated within a standard classroom setting, with the instructor introducing the rules, moderating discussion where necessary and supporting adjudication of mitigation decisions. Gameplay was followed by a short plenary discussion linking in-game decisions to subsequent business-planning assessment tasks.

The game uses a tabletop format, with teams each forming a fictitious games studio and receiving one **studio identity card**, two **studio strength cards**, four **strategy cards** and five **viability tokens**. The identity card establishes the type of studio being represented, such as work-for-hire, experimental, mobile or indie. Strength cards represent capabilities already available to the studio, such as technical skill, industry connections or clear audience focus. Strategy cards represent actions the studio may take in response to pressure, such as reducing scope or seeking additional funding. The main components of Market Forces are summarised in Tables 1-2.

In each round, a **risk scenario card** is drawn and read aloud. These cards represent business problems associated with games development, including delayed funding, market saturation and staff loss. Each risk card includes two mitigation cues, typically one strength and one strategy. After a risk is revealed, the team may use a strength, play a strategy, or accept the impact of the problem by losing one viability token. Figure 1 illustrates examples of gameplay and mitigation outcomes. If a strength or strategy is used, the proposal is assessed through a three-part **mitigation test**. The group must show that the response matches the risk, explain how it reduces or manages the risk and demonstrate that it is plausible for the studio identity in question. If the response does not satisfy all three conditions, one viability token is lost. Each round follows a consistent sequence: a risk scenario is revealed, teams discuss possible responses, a strength or strategy is selected and the proposal is evaluated through the mitigation test. A designated reality checker challenges the proposal before the group agrees an outcome, with facilitator input where required. Viability tokens are retained or lost based on the coherence of the justification.



Figure 1: Gameplay photos of round 1: risk mitigation by implementing strategic opportunity (left) and round 2: viability token penalty due to inability to mitigate risk with available resources (right)

A rotating **reality checker** role is fulfilled by a team member in each round, involving reading the **mitigation test** aloud and raising at least one challenge to the proposed response. This role exists to test the group's reasoning before the round is resolved. The Viability Tokens provide the consequence structure. Each studio begins with five. Losing tokens indicates that the studio has not dealt with a challenge convincingly enough to protect its position.

Table 1: Studio identities, strengths and strategies in Market Forces

Card type	Included cards
Studio Identity	Indie Original IP Studio; Work-for-Hire Studio; Mobile Games Studio; Publisher-Backed Studio; Specialist Niche Studio; Experimental Studio
Studio Strength	Strong Creative Identity; Agile Small Team; Experienced Leadership; Technical Skill; Industry Connections; Reliable Delivery; Clear Audience Focus; Efficient Ways of Working; Positive Team Culture; Access to Funding; Marketing and Visibility Skill; More Than One Project or Income Source
Strategy	Take Short-Term Paid Work; Reduce Scope; Work with Partners; Look for Extra Funding; Increase Promotion Effort; Refocus Studio Priorities; Change Team Roles or Responsibilities; Create Additional Income Sources; Pause New Work; Narrow the Target Audience; Improve Tools or Processes; Cut Costs

Table 2: Risk scenarios in Market Forces

Risk scenario	Explanation
Funding Arrives Late	Expected money does not arrive on time, making planning difficult.
Many Similar Studios Exist	There are lots of studios doing similar things, making it hard to stand out.
A Team Member Leaves	Someone becomes unavailable, increasing pressure on the rest of the team.
Work Takes Longer Than Expected	Time and costs increase beyond what was planned.
Platform Rules Change	A platform changes how content is promoted or monetised.
External Partner Pushes for Changes	An outside organisation pressures the studio to change direction.
People are Not Finding your Work	The studio's work is not being noticed.
Income Is Unpredictable	Some months are fine, others are difficult.
Technical Problems Slow Progress	Technical issues block or delay work.
The Studio Tries to Do Too Much	Too many ideas or features reduce quality and progress.
It's Unclear Who the Work Is For	Decisions feel unfocused or inconsistent.
People Feel Overworked	Energy and motivation drop over time.
Everything Depends on One Project	If one thing fails, the studio struggles badly.
Rules or Contracts Cause Problems	Legal or contractual issues limit what the studio can do.
The Studio Loses Focus	The studio reacts to problems instead of following a clear direction.

Discussion forms a central component of the activity throughout as teams are required to negotiate potential responses, justify their decisions and consider alternative approaches before committing to a strategy. The facilitator supports this process by presenting scenarios, adjudicating mitigation tests and encouraging groups to elaborate on their reasoning where necessary. This creates opportunities to articulate assumptions, challenge interpretations and explore strategic implications. The game was designed to bridge between conceptual understanding and formal business-planning assessment. Rather than producing written plans or pitch materials, students engage directly with strategic problems through discussion and collaborative decision-making. In doing so, the game seeks to spotlight the relationships between studio identity, organisational capability and strategic choice that underpin many aspects of games-business planning and afford students space to experiment in a low-risk, high support environment.

3. Design Analysis

The central design challenge underpinning Market Forces was how to represent business planning as a process of strategic reasoning rather than as the application of isolated concepts. Existing teaching activities within the module already provided opportunities for students to learn terminology, frameworks and planning tools. The purpose of the game was therefore not to reproduce this content, but to create a structured environment in

which students were required to use it. Design decisions were consequently guided by a desire to foreground relationships, trade-offs and decision-making processes rather than factual knowledge.

The studio identity system was introduced to provide context for decision-making. Business-planning exercises can often encourage generic solutions that are theoretically sound but insufficiently sensitive to organisational circumstances (Lainema and Lainema, 2007). By assigning each group a distinct studio profile, decisions became situated within a specific organisational context, reflecting the role of organisational positioning and constraint in shaping strategic judgement (Lainema and Lainema, 2007). Strategies that appeared viable for one studio were not necessarily viable for another. This encouraged students to consider how organisational capabilities and positioning influence strategic choices, reflecting the contextual nature of many business decisions. (Lainema and Lainema, 2007; Chernikova *et al.*, 2020). Similarly, the inclusion of strengths as a finite resource was intended to reinforce the relationship between ambition and capability, reflecting the role of constraint in shaping decision-making within interdependent systems (Lainema and Lainema, 2007; Chernikova *et al.*, 2020). Students were not simply asked how they would respond to a challenge; they were required to consider whether their studio possessed the resources, expertise or organisational characteristics necessary to support that response. This shifted discussion away from idealised solutions and towards questions of feasibility. In practice, many of the most productive conversations emerged when groups identified responses that appeared attractive in principle but proved difficult to justify in relation to their available strengths. This reflects the way in which studio identity in practice operates as both an enabling and constraining factor, shaping not only strategic direction but also the range of viable responses available under pressure (Buckingham, 2024).

The mitigation test was developed to make evaluative reasoning explicit, aligning with work on serious games as activity systems in which learning emerges through the relationship between action, constraint and evaluation (Carvalho *et al.*, 2015). Evaluation is embedded within gameplay, requiring responses to be justified in relation to challenge, identity and capability. The viability token system serves a complementary function, introducing consequence and continuity where decisions shape subsequent conditions (Faria *et al.*, 2009). Token loss provides a visible representation of organisational strain and encourages players to consider the cumulative effects of strategic decisions across multiple rounds.

Perhaps the most significant design decision was the prioritisation of discussion over simulation fidelity. Many business simulations seek to model organisational systems in increasingly detailed ways. Market Forces instead adopts a comparatively light ruleset in order to maximise opportunities for negotiation, explanation and collaborative problem-solving. The objective is to provide sufficient structure for strategic reasoning, using abstraction to preserve relationships between identity, capability and risk while allowing these to be examined through discussion. In this respect, the game treats discussion as the primary mechanism through which learning takes place rather than as an activity that surrounds gameplay. These design decisions therefore establish Market Forces less as a simulation of industry operations and more as a structured environment for abstracted, but situated strategic reasoning in a collaborative environment. Studio identities provide context, strengths establish constraints, challenges create problems requiring action and mitigation tests require decisions to be justified.

4. Discussion

The development of Market Forces reflects a tension in the literature on business simulations, where professional competence is associated with engagement with complexity and interdependence rather than discrete knowledge (Lainema and Lainema, 2007; Salas, Wildman and Piccolo, 2009). This aligns with accounts of games-business practice that treat planning as an ongoing negotiation between competing priorities rather than a fixed sequence of decisions (Buckingham, 2024), reinforcing the need for educational approaches that make these tensions explicit. The resulting design aligns with longstanding arguments that simulations are valuable because they provide opportunities to engage with organisational systems and the consequences of decision-making in ways that are difficult to reproduce through more traditional teaching approaches (Faria *et al.*, 2009). However, Market Forces adopts a comparatively lightweight approach to simulation. Rather than modelling business operations in detail, the game focuses on the negotiation of strategic responses to uncertain situations. In this respect, the intervention sits closer to traditions that emphasise participation, discussion and experiential engagement than those concerned primarily with simulation fidelity (Kolb *et al.*, 2000; Ranchhod *et al.*, 2014).

Classroom use of the game also made specific patterns in student reasoning more visible. Initial responses to risk scenarios were often framed in general terms, with groups proposing strategies that appeared commercially

sensible but failed to satisfy the mitigation test once the relationship between action, mechanism and studio identity was examined more closely. In these cases, the requirement to explain how a response would function exposed gaps in reasoning that might otherwise remain implicit within written work. The constraints introduced by studio identity and available strengths also shaped decision-making in more explicit ways. Strategies that appeared viable in isolation frequently became difficult to justify when considered in relation to the characteristics of a particular studio, prompting groups to revise or abandon initial proposals. The rotating reality checker role further contributed to this process by introducing structured challenge, with groups required to defend their reasoning against critique before outcomes were resolved. This often led to iterative refinement within a single round, as teams adjusted their responses in light of counter-arguments or identified weaknesses. A related effect was the surfacing of overconfidence, particularly where early decisions were made quickly and without sufficient attention to feasibility, with the mitigation process providing a mechanism through which these assumptions could be tested and where necessary, reconsidered.

This emphasis on participation is particularly significant when considered in relation to serious games literature. The mechanics of Market Forces were designed in line with the view that educational games are most meaningful when learning objectives, gameplay activities and instructional goals are closely aligned (Carvalho *et al.*, 2015). Studio identities, strengths, challenges and mitigation tests do not function independently; each exists to support the broader objective of encouraging students to consider how organisational capability, strategic choice and external conditions interact. Gameplay therefore becomes a mechanism through which business-planning concepts are applied and negotiated rather than simply recalled. The mitigation test is perhaps the clearest example of this relationship between learning objective and game mechanic. Rather than evaluating success through predetermined answers, the game requires players to construct a coherent justification linking a challenge, a proposed strategy and the capabilities of their studio. This approach reflects broader discussions surrounding competency-oriented serious games, where meaningful action and observable decision-making are treated as important indicators of professional capability (Marengo, Pagano and Soomro, 2023; Bijl *et al.*, 2024). Although Market Forces was not designed as an assessment tool, the mechanic nevertheless creates opportunities for aspects of strategic reasoning to become visible through play.

A further point of connection concerns the role of discussion within learning. Reflection and debriefing have long been identified as important components of simulation-based learning (Crookall, 2010), while more recent work has highlighted the value of participatory and discussion-oriented game structures for supporting collaborative exploration of complex issues (Busari, Yaldiz and Verstegen, 2018; Wanick, Stallwood and Xavier, 2023). The tabletop format adopted by Market Forces places these interactions at the centre of the experience. Strategic decisions emerge through conversation, negotiation and collective evaluation rather than through the optimisation of a rules system. As a result, much of the educational value of the activity lies not in the game state itself, but in the discussions generated around it. The game also illustrates a potential role for tabletop approaches within games-business education. While digital simulations can model complex systems with considerable sophistication, they often require substantial development effort and may obscure aspects of the decision-making process through automation. The comparatively simple structure of Market Forces makes strategic reasoning more visible, allowing students and facilitators to interrogate the assumptions underpinning particular decisions (Risley, Buzady and Xu, 2025). This suggests that, in some contexts, educational value may derive less from increasing simulation complexity and more from creating opportunities for learners to engage explicitly with uncertainty, trade-offs and organisational constraints.

5. Conclusion, Limitations and Future Work

This work has presented Market Forces, a tabletop serious game developed to support business-planning education within an undergraduate games programme. The intervention emerged from a recognition that undergraduate games design students often demonstrate understanding of business concepts in isolation while finding it more difficult to evaluate how those concepts interact within the complex and uncertain contexts that characterise professional practice. Through the use of studio identities, organisational strengths, industry risk scenarios and a participatory mitigation process, the game was designed to foreground relationships between strategic choices, organisational capability and external pressures. This design draws upon literature emphasising experiential engagement, participation, discussion and decision-making as important components of professional learning. Rather than presenting business planning for games studios as a linear process or a collection of discrete techniques, Market Forces positions business planning as an ongoing process of negotiating constraints, evaluating alternatives and responding to changing circumstances.

While serious games have been applied extensively across management and professional education, examples designed specifically for games-business teaching remain comparatively limited. Within that case, the intervention demonstrates how strategic reasoning can be externalised through gameplay by requiring assumptions, trade-offs and contextual judgements to be articulated, contested and revised in situ. Market Forces also shows how abstraction can be combined with situated decision-making, preserving the relationships between studio identity, capability and risk without relying on detailed simulation of industry processes. In doing so, it offers a practical example of how studio planning, strategic risk management and organisational decision-making can be enacted through structured play. This offers a practical example, which extends discussions surrounding simulation-based learning and serious games into the context of undergraduate games education.

Several limitations should be acknowledged. Firstly, this paper presents a design case rather than an empirical evaluation. The game was developed for use within normal classroom delivery and no systematic research data were collected regarding student learning, engagement or performance. The observations discussed throughout the paper should therefore be understood as practice-based reflections rather than evidence of effectiveness. Similarly, the intervention was implemented within a single institutional context and focused on a specific module within a games design programme. The transferability of the approach to other disciplinary contexts, institutional settings or student populations therefore warrants further investigation. Opportunities for future research include formal evaluation examining student experiences, patterns of interaction and perceptions of learning. Particular attention should be given to the ways in which students negotiate strategic decisions during play and whether participation influences subsequent business-planning activities or assessment performance. Further work will also explore alternative studio profiles, additional industry scenarios and adaptations of the game for entrepreneurship, creative industries and broader business education contexts. Comparative studies examining tabletop and digital implementations of similar concepts may also provide valuable insight into the relationship between game format, discussion and strategic reasoning.

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