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The Strategic Role of Accounting in the Era of Digital Economy

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Abstract. Due to the rapid growth of digital economy, corporations trading virtual goods such as online gaming and digital content platforms have become a key driving force of economic activity. On digital platforms, these enterprises sell intangible, data-based products, translating to challenges to the traditional accounting frameworks. The research focuses on the evolving strategic role of accounting in virtual goods companies, particularly in revenue models, revenue recognition, cost management, and intangible asset capitalization. The study adopts a qualitative, conceptual approach based on a critical review of relevant literature at first. Through an analytical examination of practical cases—such as Netflix and revenue recognition under IFRS 15—the study investigates accounting practices in digital business models. This paper argues that beyond being a reporting tool, accounting also plays an essential role in value creation by structuring new revenue models and pricing strategies and producing transparent financial reporting to enhance stakeholders' confidence. Additionally, it is essential in intangible asset valuation, performance measurement, and cost management, contributing to sustainable organizational growth.

Keywords: Accounting, Digital economy, Revenue models, Pricing strategies, Virtual products

1. Introduction

In the expanding digital economy background, the enterprise supplying top-up service for online games or music and any data-related digital product companies has already become the significant driving force behind economic activity. We called these companies virtual goods companies. These enterprises operate on digital platforms, trading intangible products that exist in the form of data and code. Virtual products take the form of online courses, eBooks, video games, etc. [1,2]. Its intangible nature, replicability, and the instability of its perceived value pose obstacles for traditional accounting frameworks to fully reflect its true economic contribution. Value creation refers to the process of creation and adding value, whether financial or non-financial, to products. It is widely considered as the fundamental purpose of an organization [3]. As corporate value increasingly depends on customers' engagement, platform interactivity, data asset scale, and algorithm-driven business models, the role of accounting in virtual goods enterprises is shifting from "recording the past" to "guiding the future" [4].

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This paper explores challenges and the evolution of accounting due to the rise of virtual products. Specifically, it examines accounting's role in guiding new business models, revenue recognition and organizational strategies. This paper provides a valuable reference for re-evaluating the strategic function and future development of accounting.

2. Literature review

The gap between existing research and the rising significance of virtual goods suggests a need for further exploration into the strategic role of accounting practices in the modern economy model. Traditional studies centered on the measurement functions of accounting (e.g., capital budgeting, performance evaluation). For example, Hilton and Platt consider its functions as "identifying, measuring, and communicating financial information" [5]. Moreover, theories such as strategic management accounting recognize the decisive role of accounting on the strategic and managerial level. According to a case study observed by Van Cauwenbergh, investment appraisal serves as a critical factor in guiding strategic management choice [6]. Managers usually seek more accounting analysis consisting of different options. The importance of accounting in strategic decisions can also be highlighted by AICPA, which claims that the basis of decision-making can be attributed to accounting [7-9]. The staggering rise of digital commerce, characterized by virtual goods translates to a clear challenge of traditional accounting paradigms. One example is the expansion of gaming industry which is predicted to reach $321 billion by 2026. This can be largely attributed to the popularity of virtual goods such as in-game skins or NFTs [10]. Khan also emphasized the phenomenon of virtual commerce by calling it the "new frontier for entrepreneurs" with growing influence on real-world economic trends [11]. Therefore, it is necessary for accounting to accommodate to the context of digital economy by supporting firms to navigate the opportunities and challenges in this era.

3. Analysis of the strategic role of accounting decisions

3.1. Revenue model structuring

The "Freemium" business model is extensively utilized by virtual goods corporations. Their cost structure, characterized by high R&D as well as maintaining spending, translates to complex and highly variable revenue structures. It can thus be argued that accounting has transformed companies' revenue model in the context of virtual economy. A revenue model is a revenue and pricing mechanism to monetize customers' value and make financial forecasts [12-14]. Instead of traditional one-off sales, virtual products are characterized by regular transactions, in-app subscriptions and digitally delivered products. Accounting thus serves as a strategic tool to design and manage the revenue model for the firms. A clear illustration is Netflix's tiered membership pricing in Japan. There are three plans in total which cost JPY 890, JPY 1,590 and JPY 2,290 respectively every month. As prices rise, users enjoy more benefits such as device allowances, quality features and download options. For example, the cheapest "Standard with ads" tier attracts price-sensitive users who, however, have to watch advertisements. Therefore, accounting determines whether advertising income compensates for the lower subscription fee by calculating the average advertisement's income and subscription income per user. This requires accounting to forecast ad revenue per user and compare it to subscription income per user. By contrast, the price of the "Premium" tier is designed to be higher because accounting proves it has both higher operating costs and higher profitability per user. This can be proved by the fact that the 4k resolution is only available for

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premium users and the others can get a maximum resolution of 1080p. Thus Netflix's accountants are responsible for balancing the additional costs of server load and bandwidth consumption costs with the platform's revenue made from premium users, providing a precise financial basis for resource allocation. Moreover, users need to renew their plans every month, which ensures recurring digital subscriptions, ensuring a stable, predictable revenue stream and long-term sustainable development for Netflix. As a result, managerial level of Netflix is able to select monetization strategies that maximize total revenue while targeting multiple consumer segments—something impossible without the mentioned calculations made by accountants. Accounting decisions hence act as the "navigator" for the business model throughout virtual goods companies' operation.

3.2. Revenue recognition and pricing strategy: finding a balance between earnings smoothing and expectations management

Revenue recognition policy is one of the most strategically considerable accounting decisions for companies dealing in virtual products, as it directly shapes the presentation of the income statement and influences capital market expectations. The International Financial Reporting Standards (IFRS) is a globally recognized accounting framework for transparent, comparable, and trustworthy financial reporting [15]. According to IFRS15, a corporation has to "identify the contract(s) with a customer" which applies to a company with virtual products [16]. In video games, when a player completes a transaction to purchase in-game currency or other digital items, the contract between the buyer and the platform is formed legally. In this context, whether the revenue is recognized immediately at the point of sale, or deferred based on the estimated consumption pattern of the virtual goods results in significantly different strategic outcomes.

Recognizing revenue immediately can boost short-term profit, potentially pushing up share prices and meeting investors' demand for quick returns. However, this approach doesn't match the consumption pattern of customers, creating a risk of severe earnings volatility in future periods. Because once their spending slows, profits may fall sharply, undermining investor confidence. To reduce such volatility and ensure sustainable, long-term development, IFRS 15 establishes clear standards on the point of recognition. IFRS 15 rules that the firm cannot "recognize revenue" until a "performance obligation is satisfied", ensuring that reported income reflects the delivery of economic value rather than cash inflow. This chimes with Meituan's sharing bike service. Because when a consumer purchases the virtual 30-day pass, which normally costs 15.8, Meituan cannot identify this fare as revenue immediately. Instead, the service would be delivered progressively over the month, and this income can only be recognized after the pass expired. This may lower current-period profit but aligns revenue with the consuming pattern of the public, providing a more consistent and reliable signal to capital markets. Moreover, the point of recognition directly influences pricing strategy as well. For example, if Meituan users activate monthly auto-deduction for the 30-day pass, the fare would be reduced from 15.8 to 14.8. The discount would encourage consumers to turn on auto deduction, which ensures a stable and predictable revenue chain. According to IFRS 15, the firm should "allocate the transaction price to each performance obligation". Therefore, when using deferred recognition, firms are more inclined to adopt pricing models that emphasize recurring consumer engagement such as subscriptions. Thus, in the era of digital economy, accounting plays a fundamental role in the choice of revenue recognition policy, which drives corporate strategy and the firm's sustainable growth trajectory. This also effectively enhances transparency, reduces uncertainty, and maintains stakeholders' confidence in firms' long-term value creation.

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3.3. Performance measurement and integration of user metrics: from financial reporting to a value dashboard

The conventional financial statements solely focus on financial indicators, translating to limitations in assessing corporations' performance from a strategic and holistic perspective. Conversely, in current digital business models, value creation increasingly depends on non-financial factors including user retention rates and daily active users (DAU) as well as average revenue per paying user (ARPU), reflecting long-term cash flows and ecosystem vitality. Therefore, integrating non-financial metrics into management accounting systems is essential for linking accounting information with corporate strategy. This can be illustrated by Duolingo, one of the most influential digital language-learning platforms across the globe [17]. For example, Duolingo's product team segmented users into 7 categories based on their engagement metrics such as current users retention rate (CURR) and new users retention rate (NURR). By organizing and modelling the collected data, the team identifies CURR as the 'North Star Metric' with the greatest influence on DAU and the overall long-term user growth. This model allowed Duolingo to predict future scenarios and quantify the strategic relation between CURR and non-financial metrics with the sustainable growth of Duolingo compounding growth over time. They thus formed a Retention Team focused on increasing CURR, leading to development of features such as leaderboards. As a result, the platform's current users retention rate (CURR) and daily active user (DAU) increased by 21% and 450% respectively in 4 years [18]. Therefore, for digital product corporations, the accounting department are also responsible for analyzing this non-financial user data, making them part of a strategic performance measurement system. Instead of relying solely on revenue figures, integrating metrics like CURR and DAU into forecasting and cost models helps firms recognize underlying issues and revenue drivers, which guides tailored organizational growth strategy. Another example is Duolingo's declining monetization ability despite its global expansion and the introduction of new functions. By 2024, subscribers made up only 8.8% of monthly active users. Its average revenue per user (ARPU) fell to $75 annually [19]. From the traditional accounting perspective, the rising costs whilst declining revenue per user translate to unsustainable financial growth. However, when accounting integrates user metrics into analytical models by analyzing retention improvements alongside DAU, Duolingo's accounting teams could justify consistent investment in user engagement features even when short-term ARPU doesn't immediately improve. This expanded analytical role reflects how modern accounting integrates data analytics and performance modeling, contributing to strategic decisions and sustainable growth in digital firms like Duolingo. In this case, performance measurement shifts from financial reporting to a dynamic value dashboard that fundamentally creates value for the company.

4. Evaluation

Despite the enormous contribution of accounting in virtual goods enterprises, it has inevitable limitations in the era of digital economy. Firstly, although accounting creates value by inspiring organizations' strategies, its focus on non-financial metrics may blur the boundary between accounting and strategic management, potentially distracting accountants from their traditional function. Moreover, accounting's function of designing a revenue model can be compromised in a fast-changing digital market. For Netflix, the operation cost such as server maintenance and bandwidth consumption costs are highly dynamic as they can be easily influenced by macroeconomic situation. The fluctuations can lead to mistakes in forecasting statistics such as cost, influencing profitability and pricing strategy which weakens its competitive position. As a result, the accounting branch of Netflix must engage in regular refining of model and training to ensure that the existing pricing structure remains financially sustainable. It is also potentially necessary for them to be assisted by other business functions such as business analytics and strategic consultant which inevitably requires additional cost. Furthermore, it can even be argued that in an increasingly competitive environment, the space for traditional accounting roles is being squeezed, resulting in growing demand for hybrid skill sets with strategic consulting or business analytics capabilities. Secondly, while accounting-guided deferred revenue recognition translates to stable revenue stream, it compromises the immediate profitability, potentially weakening the short-term performance signals. Furthermore, even though profits smoothing improves predictability, it may mask short-term operational inefficiencies or dwindling demand, postponing critical strategic changes. For example, under deferred recognition and auto-deduction pricing, Meituan's revenue stream appears to be so stable that any decline in ride frequency or intensified competition cannot be reflected immediately. Finally, as accounting increasingly shifts to a value dashboard, firms face rising implementation and training costs, which may reduce the profit margin. Therefore, despite the strategic role of accounting in virtual goods enterprises, its expanded function must be carefully balanced with transparency, regulations, operational cost and systematic governance to avoid backfiring.

5. Conclusion

In conclusion, this paper examines the evolving strategic role of accounting in virtual goods enterprises. As firms increasingly rely on intangible, data-driven products, it recognizes that traditional accounting systems encounter unprecedented challenges in capturing value creation and supporting strategic decision-making. Through analysis of the tiered subscription pricing of Netflix, the study demonstrates that accounting completely restructures companies' revenue structure and monetization strategy. By exploring revenue recognition under IFRS 15, and performance measurement integrating non-financial user metrics, the paper concludes that accounting has moved beyond its conventional reporting function to become an active driver of corporate strategy and sustainable growth. Case evidence from Meituan, and Duolingo illustrates how accounting information ensures sustainable revenue streams and guides resource allocation, organizational development strategy.

However, the essay also highlights significant constraints of accounting. Due to its reliance on complex models and non-financial metrics, the fluctuating market environment in digital economy context weakens the credibility of forward-looking accounting output, influencing managerial decision-making. Additionally, the emerging strategic role of accounting also translates to increasing costs because firms must invest in advanced systems, and hybrid professional expertise to support these functions. Eventually, accounting will remain central in the digital economy era, but its future effectiveness lies in continuous refinement, systematic regulations, and closer integration with analytics and strategic management.

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