

DIGITAL UNIT ECONOMICS TOOLS IN MANAGING THE COMMERCIALIZATION OF INTERNATIONAL E-COMMERCE PROJECTS

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The rapid development of the digital economy has significantly transformed traditional approaches to business organization and international market expansion. Electronic commerce has become one of the most dynamic sectors of the global economy, enabling companies to access international markets with lower entry barriers than traditional trade models. Digital platforms, cross-border marketplaces, and online payment systems have accelerated the commercialization of innovative projects and business ideas. As a result, managing the commercialization process of international e-commerce projects requires new analytical approaches and management tools that allow businesses to evaluate financial sustainability and scalability in a data-driven environment.

One of the major challenges faced by digital businesses is ensuring the economic viability of their growth strategies. Many e-commerce ventures scale rapidly without sufficient attention to unit-level profitability, leading to financial instability despite high customer acquisition rates. In this context, UNIT economics has emerged as an important analytical framework for evaluating the economic performance of digital business models. This approach focuses on assessing profitability at the level of a single unit of value creation, such as a customer, transaction, or product interaction. By analyzing the relationship between revenue generated per unit and the associated costs, managers can better understand whether business growth is sustainable.

The relevance of UNIT economics is particularly evident in international e-commerce projects, where companies operate in highly competitive digital environments and face varying customer-acquisition costs, logistics expenses, and market conditions across countries. Digital technologies enable businesses to collect large volumes of data about customer behavior, marketing effectiveness, and sales performance. However, effective interpretation of this data requires structured analytical tools that translate digital metrics into meaningful management decisions.

Recent studies emphasize that data-driven management approaches are essential to digital commerce strategies. According to Laudon and Traver, modern e-commerce systems rely heavily on digital analytics tools that support decision-making in marketing, pricing, and customer relationship management. These technologies allow firms to monitor key performance indicators and adjust their strategies in real time in response to market changes [5].

In addition, the commercialization of innovative and international projects increasingly depends on firms' ability to design scalable business models. Osterwalder and Pigneur highlight that sustainable business growth is closely linked to the effective configuration of value-creation and revenue-generation mechanisms within digital ecosystems. Digital platforms and global online marketplaces offer new opportunities to scale business models, but they also require careful evaluation of the economic logic underpinning customer acquisition and retention strategies [6].

Therefore, integrating UNIT economics with modern digital analytics tools can significantly enhance the management of international e-commerce project commercialization. This integration enables managers to monitor the profitability of customer acquisition strategies, evaluate marketing investments, and determine optimal growth trajectories.

The purpose of this study is to substantiate the role of digital UNIT economics tools in managing the commercialization of international e-commerce projects and to analyze how data-driven metrics can support managerial decision-making in digital business environments.

UNIT economics is widely recognized as one of the key analytical approaches for evaluating the financial sustainability of modern digital business models. The concept is based on the idea that the economic viability of a company should be assessed not only at the aggregate level but also at the level of individual economic units, such as customers, orders, or product transactions. This approach allows managers to determine whether each customer interaction generates value for the company and contributes to long-term profitability.

In the context of digital markets, UNIT economics has gained particular importance due to the scalability of online business models. Digital platforms and e-commerce businesses can rapidly expand their customer base across geographic boundaries, but such growth is sustainable only if the economic relationship between revenue and cost at the unit level remains positive. Damodaran notes that evaluating value creation in modern firms requires a deeper understanding of the economic drivers behind revenue generation and customer acquisition costs [2].

The most frequently used indicators within UNIT economics include Customer Acquisition Cost (CAC), Customer Lifetime Value (LTV), contribution margin, and payback period. CAC reflects the total cost required to attract a new customer through marketing and sales activities, while LTV represents the total revenue expected from that customer over the duration of the business relationship. The comparison between LTV and CAC allows managers to determine whether the customer acquisition strategy is economically justified. When the lifetime value significantly exceeds acquisition costs, the business model demonstrates the potential for profitable scaling.

In addition to these indicators, digital companies often analyze metrics related to customer retention, repeat purchases, and average order value. These indicators help managers understand how customer behavior affects long-term profitability. In e-commerce environments, where marketing activities are highly measurable, these

metrics can be continuously monitored and optimized through digital analytics systems.

The commercialization of international projects is closely tied to organizations' ability to transform innovative ideas into viable business models that generate market value. According to Blank, the commercialization process involves validating business hypotheses, identifying target customers, and developing scalable revenue models. In digital markets, this process often occurs through iterative experimentation and continuous testing of market assumptions [1].

International e-commerce projects differ from traditional business initiatives due to the complexity of cross-border operations. Companies must consider differences in consumer behavior, logistics infrastructure, payment systems, and regulatory environments across countries. These factors influence both the cost structure and revenue potential of digital business models. As a result, the application of UNIT economics becomes particularly useful for evaluating the commercial viability of expansion strategies in international markets.

Digitalization has also transformed the technological infrastructure supporting business analytics. Modern e-commerce companies increasingly rely on integrated digital systems that combine customer relationship management, marketing analytics, and financial data analysis. These systems allow firms to collect real-time data on customer interactions, advertising performance, and sales dynamics. According to Kotler, Kartajaya, and Setiawan, the integration of digital technologies and marketing analytics is crucial for shaping modern marketing strategies and enabling organizations to respond quickly to changes in consumer behavior [4].

Thus, UNIT economics provides a conceptual and analytical foundation for evaluating the sustainability of digital business models and supporting managerial decisions during the commercialization of international e-commerce projects. By linking financial performance with customer behavior and marketing efficiency, this approach enables organizations to better understand the economic mechanisms that drive successful digital business growth.

The growing complexity of digital markets has significantly increased the importance of analytical tools that support managerial decision-making in e-commerce environments. Modern online businesses generate large volumes of data related to customer interactions, marketing activities, and transaction dynamics. These data streams create new opportunities for evaluating the economic efficiency of digital business models, particularly through the application of UNIT economics. Digital tools enable organizations to collect, process, and analyze the information needed to assess the relationship between revenue generation and the costs of acquiring and retaining customers.

One of the key technological foundations supporting UNIT economics in e-commerce is the use of advanced digital analytics systems. Platforms such as web analytics tools, customer relationship management systems, and marketing automation software enable firms to monitor user behavior throughout the entire customer journey.

Through these technologies, companies can track customer interactions with online stores, evaluate the effectiveness of advertising campaigns, and identify factors influencing conversion rates. As emphasized in studies on e-commerce management, digital analytics has become a central element of strategic decision-making in online retail environments [5].

Digital analytics tools enable businesses to calculate core UNIT economics indicators with high precision. For instance, marketing analytics platforms enable managers to calculate customer acquisition costs by analyzing total expenses for digital advertising, content promotion, and sales activities. By integrating these costs with customer revenue data from transactional systems, firms can estimate customer lifetime value and assess whether marketing investments generate sustainable returns.

Another important technological component supporting UNIT economics is the use of integrated customer data systems. Customer relationship management platforms store information on purchasing history, transaction frequency, and customer engagement. These data enable companies to estimate the long-term value of individual customer segments and identify opportunities for improving retention strategies. By combining marketing analytics with customer data management, organizations can develop more accurate models for forecasting revenue and evaluating the profitability of customer relationships.

Digital platforms also play a crucial role in enhancing the analytical capabilities of e-commerce businesses. Online marketplaces and digital ecosystems provide companies with access to global customer bases and standardized technological infrastructures. At the same time, platform-based commerce generates extensive data on customer behavior, pricing dynamics, and competitive conditions. Research on digital platforms indicates that the ability to analyze such data has become a key factor determining the competitiveness of firms operating in digital markets [3].

In addition to analytics platforms, modern e-commerce companies increasingly rely on business intelligence and data visualization tools to interpret large datasets and support managerial decisions. These technologies transform complex analytical results into visual dashboards that allow managers to monitor key performance indicators in real time. Such dashboards often include metrics related to customer acquisition efficiency, sales performance, conversion rates, and retention levels. The integration of financial and marketing indicators within unified analytical systems allows managers to better understand the economic drivers of business performance.

Artificial intelligence and machine learning technologies are also gradually becoming part of the analytical infrastructure supporting UNIT economics. These technologies enable companies to process large datasets and identify patterns in customer behavior that may not be immediately visible through traditional analysis methods. AI-based systems can support demand forecasting, dynamic pricing strategies, and personalized marketing campaigns. By improving the accuracy of customer behavior predictions, these technologies contribute to more effective management of customer acquisition costs and revenue generation.

Digitalization therefore, significantly enhances the practical applicability of UNIT economics in the management of e-commerce businesses. By integrating digital analytics, customer data systems, and advanced analytical technologies, companies can evaluate the economic efficiency of their business models with greater precision. This allows organizations to optimize marketing investments, improve customer retention strategies, and ensure that business growth remains economically sustainable.

The commercialization of international e-commerce projects represents a complex managerial process that involves transforming innovative ideas and digital products into viable business models capable of generating sustainable revenue in global markets. Unlike traditional business expansion strategies, digital commerce enables companies to enter international markets relatively quickly through online platforms and digital distribution channels. However, the success of such expansion depends not only on market access but also on the economic sustainability of the underlying business model.

One of the key challenges in the commercialization of international e-commerce projects is balancing rapid growth with financial stability. Digital businesses often prioritize aggressive customer-acquisition strategies to gain market share, particularly in highly competitive online environments. While such strategies may lead to rapid expansion, they can also pose significant financial risks if the cost of acquiring customers exceeds the revenue they generate. UNIT economics provides an analytical framework that allows managers to evaluate whether growth strategies contribute to long-term profitability.

The application of UNIT economics to international project commercialization enables firms to assess the economic viability of different market-entry strategies. By analyzing customer acquisition costs and lifetime value across different geographic markets, companies can identify which markets offer the most favorable conditions for expansion. Differences in marketing costs, consumer purchasing power, logistics infrastructure, and regulatory environments may significantly influence the profitability of cross-border e-commerce activities.

Strategic management of digital projects also requires the ability to design scalable business models. According to Osterwalder and Pigneur, successful business models must clearly define how organizations create, deliver, and capture value within a market ecosystem. In digital commerce, scalability is often achieved through standardized technological infrastructure and automated operational processes, enabling firms to serve large numbers of customers without proportionally increasing operational costs [6].

The commercialization process also involves continuous experimentation and validation of business assumptions. In the context of digital entrepreneurship, companies frequently test different pricing strategies, marketing channels, and product offerings before identifying the most effective combination that supports profitable growth. Blank emphasizes that iterative experimentation and customer feedback are

crucial for validating business models and reducing the risks associated with new venture development [1].

In international e-commerce markets, the commercialization process must also account for differences in consumer preferences and digital infrastructure across countries. Cultural factors, payment systems, logistics networks, and legal regulations may significantly affect the adoption of digital products and services. As a result, companies must adapt their strategies to local market conditions while maintaining the overall economic logic of their business models.

UNIT economics provides managers with a set of measurable indicators that support informed decision-making throughout the commercialization process. By continuously monitoring key metrics such as customer acquisition cost, lifetime value, and retention rates, firms can adjust their marketing strategies and operational processes to maintain profitability during periods of growth. This analytical approach helps organizations identify inefficient marketing channels, optimize pricing strategies, and allocate resources more effectively.

Furthermore, integrating UNIT economics into strategic management enhances communication among managers, investors, and project stakeholders. Investors increasingly rely on unit-level financial indicators to evaluate the growth potential of digital ventures. Demonstrating positive UNIT economics signals that a business model can generate sustainable value and scale successfully in competitive digital markets.

Thus, the application of UNIT economics in managing the commercialization of international e-commerce projects contributes to more effective strategic decision-making, reduces financial risks associated with rapid expansion, and enhances the overall sustainability of digital business models.

The growing role of digital technologies in global commerce has significantly influenced how companies evaluate the economic performance of their business models. In the context of international e-commerce projects, traditional financial indicators such as total revenue or overall profit are often insufficient for understanding the sustainability of business growth. Rapid expansion in digital markets may create the illusion of success while masking structural inefficiencies in customer acquisition strategies or cost management. In this regard, UNIT economics provides a more detailed analytical perspective by focusing on value creation at the level of individual customer interactions.

The use of UNIT economics enables managers to link marketing activities more directly to financial outcomes. By evaluating the relationship between customer acquisition costs and lifetime revenue, companies can better understand the economic effectiveness of their marketing strategies. This analytical approach is particularly relevant in digital markets where marketing channels are highly measurable, and performance data can be collected in real time. As noted in research on digital marketing and analytics, the availability of detailed customer data enables

organizations to optimize marketing investments and improve the overall efficiency of customer acquisition processes [4].

Another important advantage of UNIT economics is its support for strategic decision-making during the scaling phase of digital businesses. E-commerce companies often pursue aggressive growth strategies in order to achieve market dominance or benefit from network effects. However, without a clear understanding of the economic relationship between customer acquisition and revenue generation, rapid expansion can lead to unsustainable financial structures. The analysis of unit-level profitability helps managers determine whether business growth should be accelerated, stabilized, or restructured.

Despite its advantages, the application of UNIT economics in international e-commerce environments also faces several limitations. One of the key challenges is accurately estimating customer lifetime value in transforming markets. Consumer preferences, competitive dynamics, and technological innovations can significantly alter purchasing behavior over time. As a result, forecasting long-term customer value often involves some uncertainty, which must be carefully considered when interpreting analytical results.

Another limitation relates to the complexity of cross-border e-commerce operations. Differences in logistics costs, taxation systems, payment infrastructure, and regulatory requirements may significantly affect the cost structure of digital businesses operating in multiple countries. Consequently, UNIT economics indicators calculated for one market may not always be directly applicable to other geographic contexts. Managers must therefore adapt analytical models to reflect regional market characteristics and operational conditions.

Furthermore, the effectiveness of UNIT economics largely depends on the quality and integration of digital data systems. Accurate analysis requires reliable information on marketing expenditures, customer transactions, and operational costs. Companies that lack integrated data management systems may struggle to collect and analyze the information needed for precise unit-level calculations. For this reason, the implementation of modern digital analytics infrastructure becomes a crucial prerequisite for the successful application of UNIT economics in managerial practice.

Overall, UNIT economics represents a valuable analytical framework that complements traditional financial indicators and enhances the data-driven management of digital business models. When combined with modern digital analytics tools, this approach provides managers with deeper insights into the economic mechanisms underlying customer acquisition, retention, and revenue generation in international e-commerce markets.

The transformation of global commerce driven by digital technologies has created new opportunities for developing and commercializing international e-commerce projects. Digital platforms and online marketplaces enable companies to enter global markets more rapidly and interact with customers across geographic boundaries.

However, the scalability and sustainability of digital business models depend largely on the economic efficiency of customer acquisition and revenue generation processes.

The analysis conducted in this study demonstrates that UNIT economics plays an important role in supporting managerial decision-making in the commercialization of international e-commerce projects. By focusing on the economic performance of individual units of value creation, this analytical approach allows organizations to assess the sustainability of their growth strategies and identify potential inefficiencies in marketing and operational activities. Key indicators such as customer acquisition cost, customer lifetime value, and contribution margin provide valuable insights into the financial viability of digital business models.

Digital tools and analytics systems significantly enhance the practical applicability of UNIT economics in modern e-commerce environments. By integrating web analytics platforms, customer relationship management systems, and business intelligence technologies, companies can collect and analyze large volumes of data on customer behavior and marketing performance. These technological capabilities enable organizations to evaluate the profitability of customer acquisition strategies in real time and adjust managerial decisions accordingly.

The study also highlights that the commercialization of international e-commerce projects requires careful consideration of cross-border market differences, including variations in consumer behavior, logistics infrastructure, and regulatory conditions. UNIT economics provides a flexible analytical framework that can be adapted to different market contexts and used to evaluate the economic feasibility of international expansion strategies.

The effective application of UNIT economics requires high-quality data infrastructure and integrated digital analytics systems. Without reliable information on customer interactions, marketing costs, and revenue dynamics, the accuracy of unit-level analysis may be limited. Therefore, developing data-driven management capabilities should be considered a strategic priority for companies operating in digital commerce environments.

In conclusion, integrating digital analytics tools with UNIT economics provides organizations with a powerful methodological foundation for managing the commercialization of international e-commerce projects. This approach contributes to more informed strategic decision-making, improves the efficiency of marketing investments, and enhances the long-term sustainability of digital business models in global markets.

References:

1. Blank, S. (2013). *The Four Steps to the Epiphany: Successful Strategies for Products that Win*. K&S Ranch. https://web.stanford.edu/group/e145/cgi-bin/winter/drupal/upload/handouts/Four_Steps.pdf
2. Damodaran, A. (2012). *Investment Valuation: Tools and Techniques for Determining the Value of Any Asset* (3rd ed.). Wiley.

3. Hagi, A., & Wright, J. (2020). Platforms and the future of commerce. *Harvard Business Review*, 98(1), 84–92. <https://hbr.org/2020/01/when-data-creates-competitive-advantage>
4. Kotler, P., Kartajaya, H., & Setiawan, I. (2021). *Marketing 5.0: Technology for Humanity*. Wiley.
5. Laudon, K. C., & Traver, C. G. (2023). *E-Commerce: Business, Technology, Society* (17th ed.). Pearson.
6. Osterwalder, A., Pigneur, Y., Bernarda, G., & Smith, A. (2014). *Value Proposition Design: How to Create Products and Services Customers Want*. Wiley.