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Valuation of Companies Providing Digital Services in Iran

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Abstract

Intangible assets are defined as non-monetary assets that do not have physical substance but possess economic features that grant rights and advantages to their owner. The role of digital applications in this century can be compared with the function of oil in the past century with was the driving force for growth, wealth, and change. The Covid-19 pandemic has led to the rapid growth of digital services in Iran, and many companies have included digital development in their plans. However, the valuation of these companies poses many difficulties, and introducing the national information network in Iran will add to the importance of evaluation even further.

This may lead to an underestimating of the book value of enterprises with extensive intangible assets. Intangible assets are usually difficult to evaluate, and the International Valuation Standard 210 recommends three approaches: (a) an income approach; (b) a market approach; and (c) a cost approach. However, generating accurate results can be challenging. This study innovatively applies traditional approaches to digital intangible assets and combines them with a customer-perspective value to provide more precise results for decision-making and suggest new valuation pattern. To this end, one of the large companies providing digital services in Iran was selected for evaluation, and the results are presented. This pattern is practical and can be implemented for all companies providing digital services in Iran.

1.Introduction

Intangible assets have changed into a major capital component in creating corporate wealth. We live in an era of various titles, such as the information age, computer age, communication age, and technology age. When we examine all these titles altogether, we come to the conclusion that we are living in the era of intangible assets. Wealth is created through indirect and direct ownership of intangible assets. Such wealth is obtained when the ownership rights of an intangible asset are identified, segmented, and commercialized in the market. Breach of contracts, monopolistic approaches, harmful interference in commercial approaches, other non-contractual issues, bankruptcy, lender's debts, and the like often involve issues related to the ownership, transfer, use, and value of intangible assets. In this regard, the present study seeks to find a response to the challenge of registering an identifiable and systematic approach to analyze the valuation, damage, and transfer price of digital intangible assets or digital services in Iran.

The main questions are, how can we specify the basic value of digital based services evenif the price of their digital good is zero? How is the value of these companies evaluated and priced? What factors does the value fluctuate with?

The companies providing free services have increasingly grown through the country's recent policies about virtual space, but so far, there has been no method to evaluate their value. In fact, the applications of digital technologies in this century are comparable to those of oil in the previous century: the driver of growth, wealth, and change. With the advent of the Covid-19 pandemic, digital platforms gained more importance, and it became possible to develop businesses through the increasing development of digital technology and platforms. The digital economy has provided

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unprecedented opportunities for companies. Along with the traditional methods, the development of evaluation methods will definitely be important, and the value of the companies' shares will depend on evaluating all their assets. This study aims to evaluate the companies that provide digital services in Iran.

This study contributes to the valuation of free services like Shaad, Rubika, Zarebeen, and so on in Iran, which have played an important part in the communication industry since the outbreak of the Covid-19 virus. This study is of great significance in discussions of the national information network and in specifying a model for the valuation of intangible technology and digital assets as well as the market value of companies providing such services. We intend to design and implement digital platform evaluation methods for the Iranian context because, with the recent policies of virtual space in Iran, these types of companies are developing rapidly while there is no comprehensive method to evaluate their value. It should be noted that due to the extreme importance of the valuation of intangible digital assets in Iran, which has led to the establishment of a comprehensive system for this issue by the presidential institution since 2022, academics and experts emphasized the generalization of global practical methods considering the conditions of Iran's economic model. It is hoped that studies like this will help to determine the practical model for Iran.

In this respect, the importance of such an endeavor is clear, considering the novelty of the measures and the lack of sufficient experience on the part of specialists. Combining the two valuation and digital industries and sufficient knowledge of these two areas is a prerequisite for entering into the issue and providing correct and reliable results. In Iran, where the measures are still very new, it is necessary to develop knowledge and create and propose new methods for the field. Hence, this study seeks to offer a comprehensive and practical method for measurement.

The structure of the present paper is as follows: In the second section, the background of the research is discussed. In the third section, the research methodology is presented. In the fourth part, the model estimation and the analysis of the results are provided. In the fifth section, a summary and conclusion are presented, and the limitations of the research are mentioned.

2. Literature Review

Digital technologies have significantly changed the nature of the economy, particularly concerning providing and consuming digital goods and services (Tirole 2017). The everyday use of search engines like Google, Zarebin, Yahoo, and Rubika, among others, has drastically altered the consumption patterns of consumers. In the same vein, over 1.3 billion people in the globe utilize social networks to share information and keep up with the news. Indeed, these platforms protect the digital economy. Examining the basic value of digital platforms is a complicated task, as platform growth is facilitated by extremely low prices. In fact, the majority of digital services are provided at no cost (Andierson 2008), which leads to the attraction of users on one side of the market and the generation of revenue for the platform on the other. Therefore, as Evans and Schmalensee (2016) argue, in two sided markets, platforms function as matchmakers.

This study is relevant to at least two fields of the economics research literature. First, an extensive and well-established body of research on public goods exists. Public goods include all products anybody can acquire for free, such as national defence. Musgravee observed that some public goods generate negative economic results, such as poor consumer decisions or market failures. He identified demerit goods as those having disadvantages for citizens and merit goods as items with benefits. Emerging digital enterprises like Instagram and Google offer free services (Andierson, 2009). Thus, offering digital services shares similarities with the distribution of free goods. Indeed, online platforms compete with each other to obtain user attention and personal data. Nevertheless, the value of privacy is undervalued by many customers, hence increasing the prevalence of free goods in the digital age (O'Brien & Smith, 2014). Gal investigated the hidden costs of free items and determined their impact on customers' well-being. Another line of research has sought to determine how much a user might be willing to pay for a paid web search (Edelman, 2009; Evans & Schmalensee, 2007). They discovered that users would pay significant costs. Likewise, Brynjolfsson et al. (2018) assessed no-cost items. They utilized experimental data to determine the valuations of consumers. The principal reason for the high value customers assign to digital

platforms is their network effects (Rochet & Tirole, 2006). In this regard, the current study evaluates the socioeconomic impact of how much a consumer is WTP and prepared to accept to give up Instagram or Google for the first time.

The guide to intangible asset valuation (Riley, 2016) examined the traditional methods of valuing intangible assets, citing different examples. The choice of each method depends on various factors, such as the nature of the property, available data, etc., which will be discussed in detail in the next section.

The issue of valuation of companies with digital services has been examined in detail, and the parameters related to the field have been discussed and reviewed (Morrow, 2022). In another study, Dilmagani (2022) addressed the nature of data in companies and the type, value, and profit (Dilmagani, 2022). Guan et al. (2023) identified how much importance companies gave to the issue of investing in their research and development (R&D) department in the field of technology during the Covid-19 pandemic. The value of the data itself in companies was also investigated in research by Fleckenstein et al. (2023). They presented a hybrid and multi-dimensional model for measuring value.

Technology valuation and pricing models were proposed years ago by Molayi (2012) and Hamidi et al. (2014). These studies dealt with the classification of types of technology. A model for the valuation of intangible assets in companies listed on the Tehran Stock Exchange was presented by Arefmanesh and Rahmani (2015) based on a theoretical matrix. Dalirian et al. (2019) addressed the importance of the field of intangible assets. Darabi and Nateghi (2022) pointed to the impact of intangible assets on the relationship between firm growth and firm value. They showed that intangible assets currently affect firm value completely, but it is very difficult to evaluate. The effect of investing in intangible assets in explaining the effect of financial health and agency problems on the company's market value was investigated by Nikkar et al. (2018). The functions of the discrete choice experiment are also described in (Sobahanian, 2013).

3. Methodology

According to IVS 210 § 20.1. "An intangible asset is a non-monetary asset that manifests itself by its economic properties. It has no physical substance yet offers its possessor rights and economic benefits." According to Ivs 210, many intangible assets exist;

however, they often fit into one of the five categories below. 1. Marketing related, 2. Customer related, 3. Contract related, 4. Technology based, and 5. Artistic related IVS 210 points out that all of the three primary valuation methods outlined in IVS 105 Valuation Approaches, namely, income approach, market approach, and cost approach, can be used to evaluate tangible assets (Fig. 1).
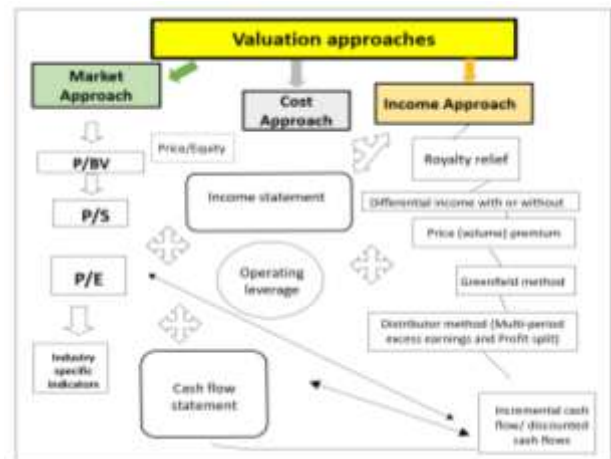

Fig 1. Valuation of approaches of intangible assets

As the valuation practice indicates, an intangible asset can be valuated using any of the three recognized valuation approaches. The expert should evaluate the properties of the intangible asset and its reproducibility, the type of advantages it can create for the owner (current or potential) and the user, and the availability or absence of a reference market when determining the most appropriate strategy.

3.1. Cost Approach

When a tangible item is acquired, its cost is normally known or can be calculated, and its economic benefits and occurrence can be reliably estimated. However, the cost of many intangibles is ambiguous because they are not the product of a project that can be isolated from commercial activity. According to IFRS 13, the cost approach indicates the amount required to replace the service capability of an asset. It is necessary to estimate the cost of generating an equal intangible asset to determine fair value using this approach. As stated earlier, evaluating the costs of creating an intangible asset in advance is often challenging. The cost approach would be impractical if these obstacles cannot be surmounted (Lennard, 2018). The cost approach stipulates that the value of an intangible asset should be set according to the sum of the capitalized expenses incurred to realize or

replicate the intangible. This technique is limited because it overlooks maintenance expenses and the cost of time. It also does not apply to income-generating assets. The cost approach typically encompasses two primary approaches: replacement and reproduction costs.

3.2. Income Approach

The income approach is predicated on past and future economic benefits that may be attributed to an intangible asset concerning both license (royalties) and incremental incomes. It transforms future cash flows (revenues and expenses) to a present value that has been discounted. The calculation may resemble that of the current value. To arrive at a fair value, however, the future revenue must be evaluated from the perspective of market players, not the company itself. Consequently, employing the income approach necessitates an understanding of how market players would value an intangible asset's benefits (Lennard, 2018). Intangible assets have value under the income approach to the degree that they can create a competitive advantage in the form as multi-period surplus gains. This is a projection of pure income in which intangible assets are the primary revenue-generating assets. The basis of income approaches is estimating future economic gains, such as discounted cash flows. The income approaches include financial ones. Thus, the estimation of incremental cash flows criterion is linked to the market approaches in a functional manner. It derives some parameters (in fact, the market) for estimating the value of shareholders' equity and financial debts from the market approaches the main approaches are:

- The relief from royalty
- The premium profit/with and without
- The excess earnings
- The greenfield
- The distributor
- Discounting cash flows

3.3. Market Approach

The market approach takes the prices and other pertinent data from market transactions of identical or comparable assets into account. Nevertheless, many intangible assets are not traded. Lev relates this to "difficulties in contracting, insignificant

marginal expenses, and fuzzy property rights" (Lev 2001). As stated in IAS 38, "An active market cannot exist for brands, newspaper mastheads, music and film publication rights, patents or trademarks, as each of these assets is unique" (IAS 38, par. 78). Uniqueness is a source of both strength and weakness. Unique intangibles (such as a patent) attract a premium over other external assets, but they are difficult to compare, which makes their valuation more challenging. Many intangible assets are "context-specific"; therefore, purchasers may find them of little or no value (Haskel 2017). This approach, when used, compares similar assets in terms of income or incremental assets or analyzes comparable transactions and market multipliers. The primary disadvantage of this approach is the information asymmetries intrinsically associated with the confidentiality of intangible assets, making it difficult to locate the date required for comparisons. The main approaches are: 1. Empirical approach, 2. Valuation of the differential assets, and 3. Price/book value index.
Discrete choice experiment

3.4. Discrete choice experiment

One of the tools widely used today in various studies to identify and extract individuals' preferences in different areas like marketing, management, and economics is the discrete choice experiment approach. In addition, the discrete choice experiment is employed for the economic valuation of the benefits of various programs and policies in various fields or the components of a program or a product. From an economic point of view, values can be related to the consumption of goods and services purchased in the market, as well as the resulting services which have not even been paid for. Therefore, anything from which an individual gets satisfaction, as long as they are willing to lose or pay rare resources to obtain it, is considered a value. Economic values are measured through the concepts of willingness to pay (WTP) or willingness to accept (WTA) individuals' compensation for changes in their conditions and from two general approaches of stated preferences and revealed preferences. The revealed preference approach refers to observing preferences revealed by real behavior. Using the revealed preferences approach requires the existence of a market demand curve for the product in question. Nevertheless, in many cases, either there is

no market for the product or the market is incomplete. On the other hand, in the stated preferences approach, consumers are asked to state their preferences for a given product or policy. The discrete choice experiment (DCE) is one of the valuation approaches in the framework of the stated preferences approach. DCE is based on several robust economic theories: probabilistic choice and random utility theories. It is compatible with Lancaster's economic theory of value and neoclassical economics (Lancaster, 1966). Each respondent is assumed to have a two-part random utility function (Louviere et al., 2000). One part relies only on the factors observed by the researcher, and the other part represents all the factors affecting the consumer's choice. Therefore, the utility function can be written in the form of equation (1):

$$U_i = V_i + \varepsilon_i \qquad (1)$$

In the above relationship, U_i is the true utility but unobservable for option, V_i is the systematic observable component of utility, and ε_i is the unobservable component for the researcher, which is treated as a random component. Therefore, V_i is the explainable part of the choice variance and its unexplained part. Assuming that one can select between two options i and j, the probability of choosing option i by the individual is obtained through equation (2):

$$P_i = prob(U_i > U_j) = prob(V_i + \varepsilon_i > V_j + \varepsilon_j) = prob(V_i - V_j > \varepsilon_j - \varepsilon_i) \forall i \neq j \qquad (2)$$

From this relationship, one can observe that the higher the probability of choosing an option, the greater the difference in the observed utility. In a discrete choice experiment, each audience's information must be converted into a single utility number. If we show the price component by p, the willingness to pay can be derived from equation (3).

$$WTP_i = \frac{dx_i}{dU_{income}} = -\frac{dx_i}{dp} = \frac{\beta x_i}{-\beta_{price}} \qquad (3)$$

The proper design of a discrete choice experiment is of great importance because it affects the amount of information that can be extracted from people's

preferences. The best model in this regard was proposed by Ryan (2004). This design is done in five stages (Fig. 2).
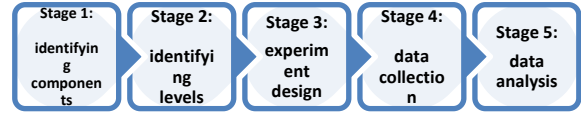

Fig. 2. The design stages of a DCE

Value method from the customer's point of view
The traditional methods of valuation of intangible assets, including market, cost, and income approaches, were explained. While efficient and usable, these methods are not always accurate in the case of companies providing digital services with specific intangible assets such as intellectual capital, knowledge, technical platform, database, customer data, mobile software, etc., and overestimate or underestimate the value (Moro Visconti, 2022), as one should consider the value of their services from the customer's point of view. The value from the customer's point of view, in fact, determines the actual price considered by users in exchange for the services or products of a company (Bodo & Herzog, 2018). However, collecting and adding other information to this data is necessary to determine the final value. This method was added to complement the ordinary methods discussed to provide more accurate results and a different overview. Thus, it is suggested to use the methods of pricing the goods and services of a given company to value the company or brand and determine the value of that company from the point of view of users and customers.

This valuation method helps derive more acceptable and concrete results regarding the intangible assets of digital services, which are more of an information technology type. This issue gains importance on the accounts that, considering the type of these companies and their digital services, customers are easily available online all over the world, and their opinions can be accessed. Therefore, this study combines the common methods with a valuation method based on an online discrete choice experiment mentioned in the previous section, along with a survey method to obtain social, economic, and geographic information. The purpose is to measure the characteristics of customers, willingness

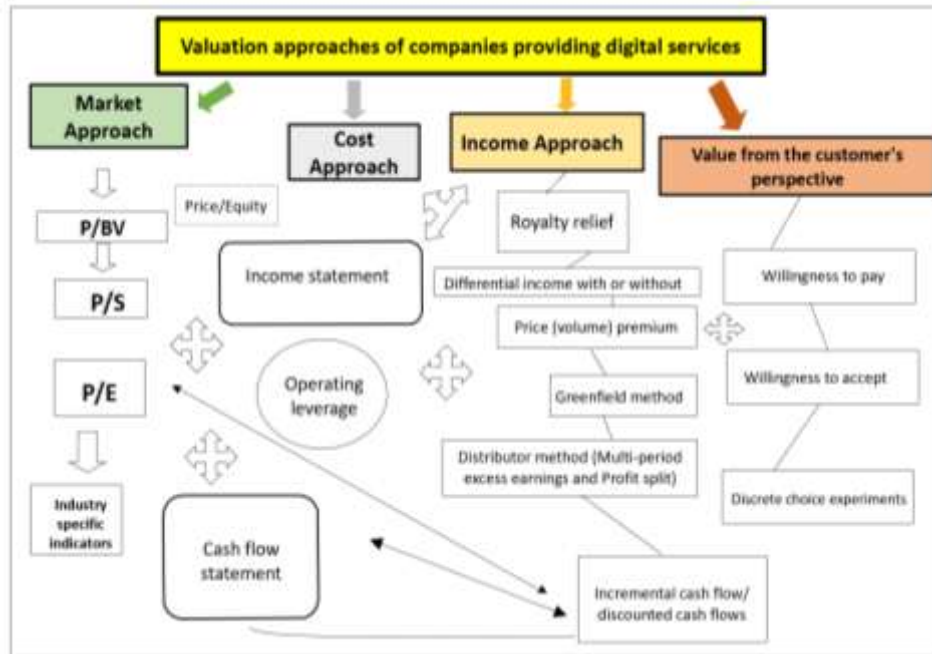to pay (WTP), and willingness to accept (WTA). Figure 3 shows the proposed model for valuing digital services.

Fig.3. The proposed pattern for the valuation of digital

3.5. Combining Evaluation Perspectives

After obtaining the results through different methods, the results of different approaches should be integrated at this stage. Two methods are proposed for this purpose. The first method is determined by expert evaluators according to the contents mentioned in the previous sections and the importance of each method in each study case. Considering the importance of the income approach and the fact that the company's current income is the main valuation criterion, the highest importance is attributed to this approach. The market approach is considered due to the emphasis on the companies being Iranian, and it will explain the economic atmosphere of Iran. The cost approach looks at the potential capabilities of the company and the data it has. The value from the customer's point of view is indeed the most important component of valuation in terms of popularity and social recognition. These factors can be extracted from the evaluator's thoughts, experience, and expertise. However, since the basis for determining the coefficients is the available data and the evaluator's experience, another method is proposed to prevent human error. To this aim, it is recommended to apply the data

generation method based on random coefficients and their normalization and consider the linear average of the results. With this simple explanation, one can be sure that the numbers will be reliable, although the numbers of each method can be used alone for the desired application and purpose.

4. Analysis and Discussion

For the purpose of valuation, Efforts were made to ensure that the selected companies have all the necessary criteria and most digital intangible assets concerning being digital. These applications include Aparat, Namava, Filimo, Tamasha, Namasha, Fano Film, Digitoon, Student Educational Network (Shad), Iranian messengers, including Igap, Soroush, Bale, Eata, and Iranian software download applications, such as SibApp, Sibcheh, Myket, and Cafe Bazaar, and Shopping applications including Digikala, Torob, Digistyle, Divar, and Snapp. Another comprehensive and versatile social network in Iran is RubiKa. Rubika has been introduced as an Iranian super application that offers a wide variety of features, including all the mentioned items. Besides, Rubino Plus, part of the Rubika application, has a design similar to Instagram and is considered a social network.

Rubika Super Application, as the most comprehensive Iranian digital service, includes all the services provided by other Iranian companies. Therefore, it is the main option to choose. Intangible assets related to a Rubika digital company are as follows: knowledge, technology, software and databases, artificial intelligence, trademarks and brands, websites and domain names, mobile applications, big data, social networks, and technology start-ups.

The possibility of accessing their data was examined by creating a list of companies with digital services in Iran. Due to governance issues, the policies adopted by each company, the financial support of start-up companies by large companies, etc., it is not possible to access the data and the necessary parameters of most companies until the decision is made to publish such data, and there is no possibility of sharing them in Iran. But fortunately, access to the data of the main company selected, which has all digital services as a super application, was made possible. By selecting Rubika as the main option to be evaluated, it became possible to access the necessary data through the support of Hamrah-Avval company and the industry experts. These available data include the following.

The number of registered and active users, the number of free and non-free users, the drop rate of users, the amount of free and non-free traffic generated, the amount of income, expenses, and future predictions, the average rate of traffic consumption per user, the average payment rate per user for the traffic, average revenue per user (ARPU), the cost of Internet links to connect to the infrastructure and international, the throughput rate in megabits per second, the information of relatively similar companies in the stock market in terms of technology and user culture to obtain their data.

4.1. Income Approach result

Access to companies' financial statements for the coming years, their plans, and managers' expectations and predictions of future conditions makes analysis and review possible. For this purpose, the practical methods proposed in the previous sections were used, and with the specified indicators and methods in accordance with the company's model, the evaluation method was determined, and the calculations were done. The income information of the mentioned company was extracted from their financial statements for the last two years and included in the table. In addition, it was compared with the annual revenue method based on the traffic and number of users for verification purposes.

Such information includes operating revenues, operating costs, administrative, general, and selling expenses, income tax, and estimated capital costs. Through interviews with company managers and receiving their predictions and justification about the future of the company's revenues, the columns for the next year were completed. Argumentative calculations are presented in the rest of this section. Due to the governance conditions, a four-year forecast perspective was considered for revenues and financial conditions, and the useful life was determined to be five years from the time of launch. It is obvious that if the business continues, calculations for future years should also be added to the following tables. The yearly discount rate of 18% was also considered for calculations. Therefore, the company's revenue was calculated every year and based on the total depreciation of the company's value. Table 1 shows the calculations accordingly.

Table1.

Calculations Based on The Income Approach

Valuation Variable Predictions*	2020	2021	2022	2023	2024	2025
Operating revenues	1,476	6,610	33,600	38,000	41,000	43,000
Operating costs	254	1,144	5,714	6,579	7,099	7,445
Gross profit	1,213	5,466	27,286	31,421	33,901	35,555
Administrative, general, and sales costs	109	491	2,452	2,823	3,046	3,195
Operating profit before interest and tax	1,104	4,974	24,834	28,597	30,855	32,360
Income tax expense	287	1,293	6,457	7,435	8,022	8,414
Net operating income after tax	817	3,681	18,377	21,162	22,833	23,946
Estimated capital cost	70	77	85	94	103	115
Investments in working capital	250	300	360	430	550	600
Final	497	3,304	17,932	20,638	22,180	23,231
The current 18% value discount factor	-	-	0.92	0.78	0.66	0.56
Present value of income	-	-	16,498	16,098	14,639	13,010
Total present value of income	-	-	60,243	-	-	-
Determined fair value	-	-	60,000	-	-	-

*The numbers are in billion Rials.

4.2. Market Approach result

As mentioned earlier, one of the evaluation methods is the market-based approach, which relies on comparable companies in the same industry. This approach requires the existence of similar markets and comparable companies to the target company. Due to the lack of similar companies and social networks in the Iranian stock market, according to industry experts and the relationship of this company with the computer industry, companies in this industry were used as examples to calculate value ratios. In this approach, the Price-to-Sales (P/S) ratio based on the trailing twelve months (TTM) was used as the valuation model, and the average ratios of selected companies were utilized (Table 2).

Table 2.

The Price-to-Sale (P/S) Ratios of Iranian companies

P/S ratio	Symbol	TTM
Tap30	Tapsi	4.8
Afranet	Afra	6.8
Negin Soft System Development	Tousan	12.2
Sepidar System Asia	Sepidar	10
Rayan Hamafza	Rafza	4.8
Khavarzami Information Technology Development	Mafakher	4.4
Informatics Services Corporation	System	10.4
Hamkaran System	Ranfor	3.8
Iran Argham (Iran Numerical Data Services)	Margham	3
Average		6.69

Based on the average price-to-sales ratio and the revenue of the company in 2021, and applying a discount rate of 18% to the current year, the value of the company was calculated as shown in Table 3. It should be noted that all calculations are in billion Rials.

Table 3.
The Market Value of Rubika based on Iranian's companies

	Based on TTM
Average Price-to-Sales Ratio	5.95
One-Year Revenue (Billion Rials)	8,856
Derived Market Value (Billion Rials)	52,693

In the next step, given the absence of Iranian companies with social networks, in the next method based on the market approach, the market ratios of foreign companies, including Instagram, Uber, Lift, and V.K. (the widely-used social network in Russia) were used to calculate the price-to-sales ratio for valuing the target company in this model (Table 4).

Table 4.
The Price-to-Sales Ratio of Foreign Companies

	Instagram	VK	Uber	Lift	Source
Stock market	The U.S	Russia	The U.S	The U.S	
Year of establishment	2010	2014	2009	2012	
Past year revenue (in billion dollars)	17.4	1.24	14.8	2.8	Yahoo Finance
Market value (in billion dollars)	102	6.7	80.5	14.7	Yahoo-Finance
Price-to-sales ratio	5.8	5.4	5.4	5.2	
Weighted average P/S ratio TTM for the U.S. market	2.3	2.5	2.3	2.3	Bloomberg
Weighted average P/S ratio TTM for the Iranian market	2.7	2.7	2.7	2.7	Bourse View
Adjusted price-to-sales ratio	6.8	5.8	6.3	6.1	
Average price-to-sales ratio	6.25				

Considering the distinct nature of foreign stock markets of these companies compared to the Iranian market, the weighted average price-to-sales ratio of the Nasdaq market was adjusted to align with the Iranian market for the past 12 months. Utilizing the revenue of the company for the year 2021 and applying a discount of 18% to the current year, the company's value was calculated by determining the average price-to-sales ratio. The resulting market value is 55,350 in billion rials.

4.3. Cost Approach result

We utilize this approach to determine the value (even for parts of intangible assets that have not generated any revenue for the company yet or at least not to the extent of its capital and expectation). The resulting big data is a source of users' information and can be a significant source of revenue. This information leads to the signing of advertising and development contracts for the company. The pervasive social network in Iran is influenced by governmental factors, and the goal of developing an Iranian platform to replace the global Instagram network can increase the value of these platforms several times. As previously mentioned, the two-sided markets will be the main factor in generating revenue for social networks. Therefore, according to industry experts, the value of this section can be measured with the costs of the internet and infrastructure since the other costs, including hardware, software, technical knowledge, mobile application, human resources, etc., have already been calculated in the first part of the valuation. In this approach, the usage rate is measured for the platform, and its monthly and annual costs are calculated. This cost is paid by the parent company for providing internet links. This usage rate and cost are calculated based on future year estimates in the table and are used to determine the value of this part of the intangible asset. This is the minimum value of this part based on the incurred cost. Table 5 illustrates the calculations of this approach.

Table 5.
Calculations of the Cost Approach

Valuation variable predictions	2021	2022	2023	2024	2025
Usage rate (Gigabits per second)	280	400	480	576	691
Cost per megabit per second (thousand Rials)	600	600	600	600	600
Monthly cost (billion Rials)	168	240	288	346	415
Final annual cost	2,016	2,880	3,456	4,147	4,977
18% discount factor of the current value	1.00	0.92	0.78	0.66	0.56
Current value of cost (billion Rials)	2,016	2,650	2,696	2,737	2,787
Total current value of cost (billion Rials)		10,869			
Income expectation from cost coefficient (According to industry investors)		10			
Fair value determined from cost (billion Rials)		108,694			

As shown in Table 5, the value derived from the cost approach is significantly higher than other approaches. This is due to the calculation of a portion of the valuable intangible assets that have not yet been utilized. If utilized, which is itself subject to a detailed discussion, it can result in substantial returns.

Value approach from the customers' point of view

As mentioned in the previous section, the first stage of the experiment consists of binary standard selection questions. Respondents are proposed to compensate for leaving the service or, in short, if the price was very low, they can still use the services. In the second stage, the minimum WTA for leaving the service is obtained using the user's offer. A combination of both methods simplifies the questionnaire for respondents and, on the other hand, provides new consumer information, considering that ordinary people do not think about WTP for free digital products such as Aparat and Rubika. Therefore, respondents must first choose between several fixed prices before being asked to evaluate digital services independently in stage two. This experiment was conducted using standard procedures.

All volunteer participants must first complete a survey. The survey obtained social, economic, and geographic data along with digital patent, digital abilities, and main characteristics. In the second stage, all participants should take an online multiple-choice test, as described above. Here, participants provided their WTP/WTA to quit the digital service for different periods in exchange for financial compensation. Details of the survey and test are presented below. Besides, the results focus on WTA, which is always higher than WTP. This experiment was conducted in two separate sections for the foreign applications of Instagram and Google in February 2022 and the Iranian application of the Rubika social network in October 2022. Cochran's test was used to estimate the number of samples, and the random sampling method was employed to select the participants.

The test was conducted for Rubika with 80 participants. The majority of the sample, 91.3%, were between the ages of 20 to 35. Out of the 80 respondents, 73 had Rubika accounts. These individuals' ages ranged from 17 to 55, but the majority, 94%, were under 35 years old. The sample included almost 52% men and 48% women. Regarding education, 29% had a high school diploma, 55% had a bachelor's degree, and the remaining 16% had a master's or doctoral degree. Overall, the sample represents the average youth generation in modern society.

The experiment demonstrated that the primary goal of using social media is to connect with family and friends (39%) and gather information from friends (40%). Other goals, such as entertainment, posting, and commerce, are less important than the two primary goals. Only 15% of individuals' primary goal of using social media is for entertainment, 2.4% for news dissemination, and 4.1% for commerce. This study shows that the value of social media depends on things such as the quality

of relationships among users, particularly among family and friends. A analysis indicated that individuals with more friends were willing to pay more to maintain social media, and a significant positive correlation of 74% was observed. The results revealed that 64% of all participants were willing to leave using social media for a week for 70,000 rials. The remaining 18% were willing to pay 900,000 rials for Rubika, while 11% were willing to pay one million rials, and 6% were willing to quit it for 1.2 million rials for a week. Only one participant offered to pay a higher amount, which was significantly higher, and their goal was precisely to sell their products through the social media business section. Therefore, their offer, which was 4 million rials compared to their profit, was not economically justified, so we excluded it from our analyses.

Graph 5 represents the WTP for a social network. The gathered information indicates that 51 respondents have the willingness to pay 700 thousand Rials, 14 have the willingness to pay 1 million Rials per week, 14 have the willingness to pay 900 thousand Rials, and 5 have the willingness to pay 1.2 million Rials. In total, there are 79 data points. There is a good logarithmic fit among the data, and the R-squared value of the data is 0.96.

In general, the average willingness to pay for using the Rubika social network was calculated to be 800,000 Iranian Rials per week. Additionally, the availability of alternatives and their independence from the networking effects can potentially result in a decrease in the willingness to pay compared to other digital products.
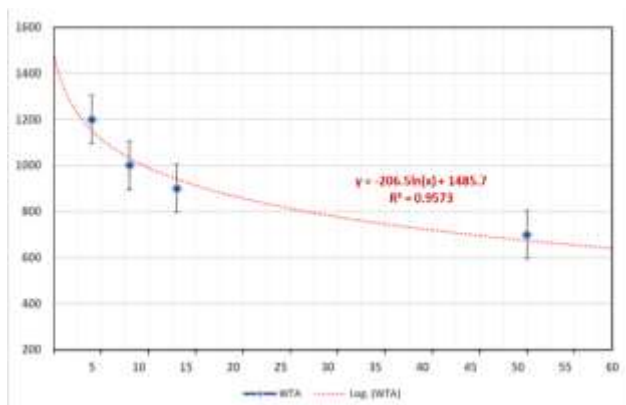

Fig. 4. The WTA for Rubika.

Overall, the WTA for Rubika among its users resulted in a value of 800,000 Iranian Rials. Considering the registered 50 million subscribers, the obtained value amounts to 40 trillion Rials. However, this estimate is lower than other approaches. The reason for this is the Iranian users' lack of trust in the new platform, which has not yet gained public trust. This issue is rooted in governance discussions, and the novelty of the platform exacerbates it.

4.4. Combination of Methods

Based on the issues discussed, we can observe that the goal is to determine the three coefficients a, b, and c related to three points of view: revenue and market point of view, cost point of view, and customer point of view. These three perspectives are considered separately for the valuation of the social network because, as previously mentioned, considering the nature and mission of the Rubika social network, the company's value is divided into the value based on current and actual activities with a revenue and market approach, the value based on potential capabilities with a cost approach, and the value of services from the users' perspective with a customer value approach. Therefore, the coefficients a, b, and c should be determined accordingly.

Fig.5. The Coefficients of the Final Model

However, since the basis for determining coefficients is available data and the evaluator's experience, it is recommended to use a method of generating data based on random coefficients and normalizing them to prevent human error. The coefficients should be applied, and linear average results should be considered. In this regard, Table 6 is obtained. However, each method alone represents its own practical value based on the desired objective.

Table 6.
The Results of Valuation with Random and Fixed Weights

Approach	Model	Value (billion Rials)	Fixed weight	Random weights													
Income (based on the present)	DCF	60,000	0.40	0.30	94	0.21	47	0.21	45	0.01	2	0.25	70	0.62	99
Market (based on the present)	Iranian P/S	52,690	0.15	0.16	49	0.19	42	0.09	20	0.38	94	0.09	26	0.20	32
	Foreign P/S	55,350	0.10	0.30	94	0.27	60	0.24	51	0.36	90	0.15	43	0.00	0
Cost (based on the future)	Infrastructure	108,700	0.20	0.17	53	0.23	51	0.37	79	0.10	26	0.32	90	0.13	20
Price (from the customer's point of view)	WTA	40,000	0.15	0.08	25	0.11	25	0.08	18	0.15	36	0.20	56	0.06	9
Total value	Obtained		65,179	64,082	315	66,212	225	74,573	213	57,744	248	70,081	28 5	63,501	160
Final total value	Final	65900													

5. Conclusion

As previously explained, the main aim of this study was to valuate companies providing digital services in Iran. In line with this goal, efforts were made to address the research questions. In the previous sections, the results of the evaluation using proposed pattern were presented. Based on the above issues, the final valuation result for Rubika is presented in Table 9. Statistical analyses show that the findings are consistent with the financial statements of the sample company Rubika in this area. In fact, the results indicate the immense market power of digital platforms. Customers perceive digital services as having fundamental value, even though they are free. Therefore, a zero price does not mean that platforms do not have a powerful market, but the opposite is the case. Hence, there is a need for new regulations for competition policy. The novel approach requires that both market sides be considered together instead of being analyzed independently. Of course, the estimates may not be very accurate. However, the results of this study generally align with technological value and confirm the evaluation of the market for digital goods and services.

Based on Damodaran (Professor of evaluation)'s opinion, evaluation is a qualitative action that depends on the evaluator's opinion, method and evaluation parameters. Therefore, it is never possible to talk about the result with certainty. But the obtained results are consistent with the previous evaluation of this company and industry managers confirm.

This study proposed a novel valuation pattern for intangible assets in Iran, integrating traditional approaches based on market, cost, and income with customer's perspective approach. This approach can help improve valuation accuracy for companies that provide digital services and possess unique intangible assets such as intellectual capital, knowledge, technical infrastructure, customer databases, mobile software, etc. Valuation should focus on the value of their services from the customers' perspective. Therefore, it is recommended to use pricing strategies for products and services offered by the company as well as to determine the value of the company from the viewpoint of users and customers. This valuation method can help extract more acceptable and tangible results for intangible assets of digital services, which are mostly of information technology type. As it was observed, for Rubika's users, the company's value is lower than what is expressed in financial statements. Thus, by pursuing the goal of valuation, it is possible to provide the necessary data for transparent and more accurate decision-making for managers, market actors, and shareholders and prevent the presentation of inaccurate results. This issue gains importance and is suggested in that by considering the nature of these

companies and their digital services, customers become easily accessible online worldwide, and access to the opinions of customers and users becomes possible. Therefore, it is possible to verify the accuracy by comparing the results extracted from the values from the customer's perspective with the results of traditional methods and combining several methods (Figure 3).

From the viewpoint of behavioral economics, individuals' decisions are influenced by their society or, at a smaller level, by their friends and family. In fact, individuals are influenced by social, cultural, and religious norms. The fact that individuals are influenced by their surroundings does not diminish the importance of their economic motivations, but rather non-economic factors also affect individuals' decision-making. Therefore, communication and network building with friends and family is one factor that gives value to social networks such as Instagram and Rubika, as in most developed countries around the world, acquiring job opportunities is possible only through professional social networks such as LinkedIn. Finally, it should be emphasized that due to the extraordinary importance of valuing digital intangible assets in Iran, which led to the establishment of a comprehensive system dedicated to this issue by the Presidential Institution from mid-2021, the generalization of global practical methods with an eye on Iran's economic model conditions by scholars and experts is significant. Hopefully, research of this kind will help to determine a practical model in Iran.

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