Intellectual Property Valuation: Case Study in Iran

Alireza Shahraki

Department of Industrial Engineering
University of Sistan and Baluchestan, Zahedan, Iran
Email: shahrakiar@hamoon.usb.ac.ir

Abstract

Today most people are aware of the significance of competition in the international markets and establishing knowledge-based companies, which provide the infrastructure for such competition (development of global intellectual property infrastructure). Business executives become veteran and qualified with basic knowledge of intellectual property (IP) and careers and jobs based on IP to develop and increase their leadership influence in the IT era.Understanding that intellectual property valuation is effective in management resources, and that results of such valuation is used in the process of decision-making, signifies intellectual property valuation even more.Intellectual property will gradually become the criteria and milestone of a company's prospective performance and efficiency. On an average, 40% of a company's value being considered as its intangible assets will never appear in its balance sheet. It seems necessary to mention here that the results of inquiry i can say there is no specific method for the valuation of intellectual assets and most existing methods or based on three common approaches to valuation (income approach, cost, market) Or are mostly empirical and subjective .Therefore not precisely stating that an appropriate valuation model and the dimensions and features are comprehensive. This article is presented in a way that must be at least the following terms: The base price , The strategic importance of product , Financial Assessment , Technical evaluation , Risk assessment , assessing the market , Public acceptance and Test procedures.

Keywords: Intangible Property, Intellectual capital, Pessimistic State, Knowledge Assets, Value, Price

Introduction

Today intellectual property is attributed to 67% of wealth-creation (entrepreneurship) in advanced countries. In other words it plays the most significant role, whereas despite the countless talented and creative minds only 24% are responsible for intellectual property here in our country[8]. The total natural and physical share in advanced countries is only 32%. According to the official WIPO statistics number of patents is less than 100 here in Iran[20] where the number of local researchers is supposed to reach 3,000 individuals in the year 2026. In our country the significance and necessity of intellectual property valuation can include the attainment of financial facilities (attraction of Financial Support) such as credit or loan for assisting the operation and commissioning of risky businesses, process of entrepreneurship, establishing knowledge-based companies, export and import of intellectual property and

industrial property, legitimate transfer or attainment of ownership, purchase, sale and renting intellectual property, privatization of state-owned companies, improving/changing the accounting and monetary statement systems aimed at backing innovators and inventors of the creativity as well as innovation culture both financially and spiritually whiling honoring science and education, obtainment of maximum share in the international markets and ultimately providing the infrastructure for products based on innovation and joining globalization. Having sought the assistance of numerous domestic and international sources, the writer in the present essay aims to benefit from the offered method with an applied example for intellectual property valuation of a knowledge-based company while addressing the usual methods of intellectual property valuation.

The economic role of intellectual property valuation and identifying the current approaches and methodologies in this regard which determines the price of products and intellectual property services in a quantitative form leads to a boost in technological productions and development of intangible ownership, while introducing a new form of trade.

Obviously getting familiar with an approach aimed at intellectual property valuation or at least a criteria or an approach by which one can assess most of the intellectual properties,

examining the weak and strong points of each valuation method, identifying necessary legal safeguarding in intellectual property, ways to benefit from it, identifying products based on technology etc… are vital as any negligence in such cases means overlooking the economic and industrial objectives.[1]

Literature review

Concepts & definitions

I. Intangible (invisible) assets

Intangible assets are long-lasting intangible property that are developed by a commercial firm and are considered a part of its belongings. They are divided into 2 parts:

- -Identifiable intangible assets (patent, trademark, exploitation license, franchise, publishing laws, copyright, know-how etc)
- -Unidentifiable intangible assets (good name, big market share, high profitability, franchise commercial key-money, etc)[2].

II. Intellectual property[3]

Intellectual property is defined under intangible assets such as knowledge assets. Such assets are segregated from physical property such as equipment, machinery or goods on stock and financial belongings such as investments and money. They have been converted to a key source in competitive strategy of a company.

The map of knowledge assets developed by Marr & Schiuma in 2001 paves the way for executives to work in a framework to evaluate organizational knowledge from a domestic and international viewpoint, so that it is based on a widespread picture of intellectual capital relevant to an organization's knowledge assets. (Marr & Schiuma, 2001)

Knowledge asset map unveils the identification (knowledge) and definition of critical points and regions in an organization, while dividing the organization knowledge into a total of 2 organizational sources namely beneficiary sources and structural sources.
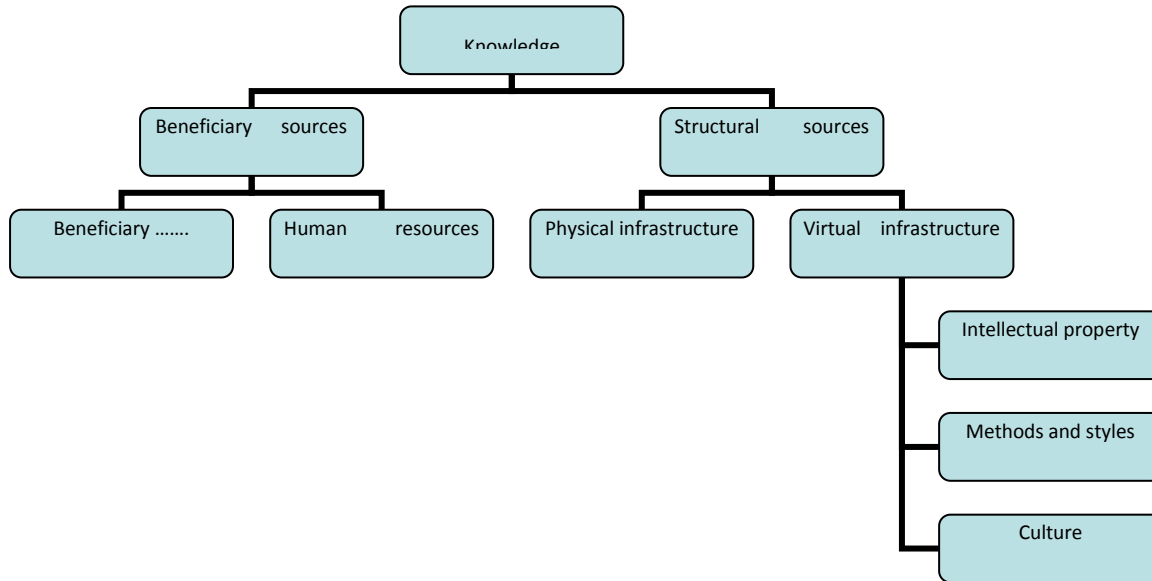
Fig.1 Knowledge asset map .[3]

Structural sources are divided into physical and virtual subordinates, which respectively refer to tangible and intangible items. Virtual subordinates are categorized into cultural, methods and styles and intellectual property the details of which are as follow:

Beneficiary links include any form of link/relationship with beneficiary. Such links comprise of agreements between shareholders, financial links, contracts about distribution channels and informal links.

Human sources consist of staff's knowledge, qualifications, obligations, incentives or even key components such as know-how, technicians, problem solving competence, creativity, training and entrepreneur spirit and attitude. Physical subordinate include construction designing as well as information technology (IT), i.e. computers and network servers. Culture comprises of organizational culture, management duties coupled with key components, i.e. organizational value, employees' network tradition, organization goals and missions.

On the other hand, culture is fundamentally responsible for organizational efficiency. Organizational culture prepares a framework in which employees will have incentive to diligently and actively work to achieve the organization's objectives. Methods, traditions and styles include domestic customs: an example of styles is industrial regulations and methodology. Styles and methods express the process of organizational work.

III. Intellectual ownership[4]: intellectual ownership is a particular case in tangible assets. Intellectual ownership is formed by human beings' creativity and innovation. It is classified into two parts:
   1. Artificial creative type: trademarks and software production
   2. Innovative creative type: patent (for discovery and invention) and industrial designs

There is also another form of classification for intellectual property:

A. Industrial ownership (property) including inventions (patents), trademarks, industrial designs as well as geographic indications of source, commercial secrets, unfair competition and technology.

B. Copyright including literary and artistic works such as novels, poems, games, musical works, artistic works such as drawings, paintings, photographs and sculptures, and architectural designs (construction schematic diagrams) and other rights.

IV. Types of transfer (cession) of intellectual ownership[4]:

a. Transfer of invention patent

b. Transfer of trade secrets

c. Transfer of copyright

d. Trademark

Intellectual ownership is also categorized in the following manner:

a. -Exclusive: without the right to compete in a specific sovereignty or domain for all the rivals and manufacturers inclusive of transfer (cession) of license.

b. -Sole: without the right to compete in a specific sovereignty or domain for all the rivals and manufacturers exclusive of transfer (cession) of license.

c. -Non-exclusive: Accepting challenge and competition in the sovereignty or domain.

d. -Simple: Free to compete, with no bounds in competition

V. Concepts of price and value: value offers a prospective advantage for the owner of intellectual property. It is relevant to the advantage utilized by the user of intellectual property[5]. But price is an amount traded (bartered) between a buyer and a seller. Given the advantages brought to both parties there is no compulsion on either of them. In other words "*Value*" stems from different reactions based on the value (worth) of a utilized technology in the products or service, whereas *price* is a commitment and outcome of a negotiation and consequent compromise between the two parties. However, it is important to note that it is the market that ultimately decides the actual worth and value of an intellectual property. For example in the last moment when it is sold of one million dollars, provided the deal in made in a fair way, meaning that both the seller and the buyer are fully aware of the value and act consciously. Therefore, neither of them is coerced to do it (Fair market/fair play).[6]

VI. Valuation: Valuation means making something quantitative as a monetary currency.

3. Common methods for intellectual property valuation:[7]

A. Qualitative method:

a. Delphi

b. Brainstorming

c. Econometric (economy assessment)

d. Seeking a specialist's advice

e. Exemption from paying fee (for patent/copyright)

B. Quantitative methods

1. Traditional (basic) methods:

a. Cost oriented

b. market oriented (comparable sale)

c. revenue oriented (anticipation of profit)

d. company's market value differential.

e. with net tangible assets

f. dealership profit (wage)

g. moneysaving

h. patent deposit

2. Advanced methods

a. Mont Carlo

b. Stationary: Tobin's, Lev's

c. Dynamic: Real option, DCF, CAV

Methodology and Research Model

The above illustrates the conventional methods having been used in intellectual assets valuation. There are certain other methods, in addition to above said ones, that are used including digit law, tender, opportunity cost, financial optional pricing, optional transaction, Black-scholes, and also the method of comparison of similar patent fees, Chicago, patent fee method, return rate method, stocks increment method, capital price method, risky capital, and so on. The reason I skipped the latter methods in my valuation tree is that they are not frequently used. [8]

Illustration of Valuation (or Intellectual Assets Pricing) Model:

Plan or Idea → Feasibility study → Laboratory Model → Leading model → Identifying the technical specifications of the plan → Market survey → Commercial manufacturing of the product →   Results Assessment

1-Pricing Process

Estimating Range of Approximate Price of Product Resulted from Intellectual Asset:

It is worth mentioning that the pricing of the product shall be done prior to the materialization of the production, because it is in this phase that the intellectual asset is assigned for the production.[10]

2-Pricing Model and Approaches used in Valuation of Price Factors

Here I should point out that in pricing each product we must identify the factors influencing it. Taking this fact into account, we have gathered the intellectual assets based on pricing factors using ideas presented by technology owners and experts and in this way we suggest the following table for valuation of each component.

Tebel 1: identify the factors influencing

Influencing Factors	Adopted Method
Base Price	Competition advantages / Cost Approach / BP Analysis
Strategic Importance	Market approach
Financial Valuation	Income approach[11]
Market Valuation	Market approach
Technical Valuation	Market approach

Risk Assessment	CAMP / Real option [12]
Value in community	Market approach
Laboratory stages	Real Option [13]

The above adopted methods are mainly either traditional or new methods which may bear some defects, including some complicated calculations, high cost (waste of time and money) in addition to high cost of skilled manpower, etc.[14]

Data collection

In this study the extent of information Go directly to the knowledge base of companies Or people with knowledge of technological products, professionals and technology experts, and library and Internet research Accounting offices and analyze information related to BP, the questionnaire after Tayydatbar and its validity Specific tests, the components of effective pricing and the indicators were extracted, The questionnaires were then given a few companies The sample was selected using random sampling of about 10 companies were selected based knowledge Here is a case where a company is pricing the product.

Data analysis methods

Benefiting from the specialists' viewpoints, in this method, we consider a point for each component based on 1-5 scale (one to five) while noting the desired marker, and after observing the influence rate of each marker on price (while ignoring the marker point), the weight of each marker is determined with consideration of specialists' viewpoints so that the sum of weights will be equal to 100. Thereafter, the weight values of markers are calculated based on the criterion ''Marker-Price relevance'' which determines the direct or indirect effect. Finally, algebraic summation of the values in weight value column gives rise to total weight value of the component. The total weight value for the component is transferred to the next level.

Weight x Point/100 = Weight Value

This operation is done for each marker. Assessment of each product shall include the final comments for each component. After extraction of all components, decision is done about rate of influence and importance of each component on final price and the weight of each principal component is calculated comparing to other principal ones.

In this level, there are 3 states as defined: optimistic, pessimistic and actual (probable) in which the conditions and manner of calculation of weights in every states and for each of principal components are as follows:

   *Optimistic approach:

 in this state, the weight of each of principal component – according to the specialists – are defined in such manner that its grand total to be equal to a minimum value of 100.[15]

- Pessimistic approach:
  In this state, weight of each of principal components, according to the specialists' views, are determined in such manner that its grand total give rises to the maximum value of 100. It should be mentioned that according to the logic of play theory, the sum of weights in optimistic and pessimistic states should give rise to 200. It means that in addition to this fact that the sum of weights in optimistic state shall be greater than or equal to 100 and the case for pessimistic state shall be less than or equal to 100, however, these two modalities are complementary and their sum should be equal to 100.
- Actual approach:
  In this state the weight of each principal component, based on mean weights of optimistic and pessimistic approaches, is calculated and then and following calculation of weights, the value of each state is calculated based on the below formula:

State weight (I) X Component Value/ 100 = State i

Algebraic summation of figures in each column of "State" give rises to the total point relevant to that state, and after general assessment based on the decision support system model, an appropriate decision is made with regard to the normalized values and coefficients. Finally, based on the following formula, one price range is obtained for each scenario:

Price of each state = (Total point of each state + 1) X base price

It shall be noted that the calculations of this part is carried out using Excel software.

Calculation Stages of Price Range of a Product based on Intellectual Assets owned by a knowledge-based Company
Please see the attached appendix which includes 9 tables (see sheet 1 thru 9)

Price in Pessimistic State = (LAIR) 16658998.44
Price in Actual State = (LAIR) 21095817.12

Discussion
After results analysis using EXCEL software, the following results were obtained:
1-Base Price
For calculation of the base price, we must enquire the price from the Accounting and Commercial Project Department. Meantime, the weight value of this component is 5, with respect to the factors influencing on base price. The price obtained from those units is Rls. 4,185,678 for this special product.

2-Strategic Importance
Included in itself a comparable value and approaching to the desired and expected competitive value, strategic importance in relation to being monopoly and national security, importance of utilization of product in optimization of consumption all are of aspects assisting to the product attraction based on intellectual assets. On the other hand, this component has been evaluated more relative to social value and technical value, such that the share of this component in product price is 4.7.

3-Financial Assessment

In this component, the investment volume index with positive effect and the likelihood of achievement to profit with indirect effect on price of intellectual assets based product will be considered. And in turn the weight of this component in product price is 3.25.

4-Risk Assessment

This component is the only one that has negative impact on intellectual assets based products prices. The probability of failure of product in industrial production stage, lack of accuracy in commercial project preparation, absence of supportive rules and regulations and laws, risk avoidance of buyers, definition of new standards for consumption of products, rate of impact of policies and plans in the company's agenda are of those factors manifesting their effects as risky impact on price of intellectual assets based products negatively. And with respect to the weight value of this component, 2.82, therefore, the risk rate for production of intellectual assets based products are relatively high. And it seems that by correction or establishment of supportive laws, preparation of business plans accurately, applying proper policies and plans and lowering risk avoidance from purchasers, we can minimize this risk value.

5-Value in Society

This component is also appeared with a relatively high influence on cost price and some factors such as hindrances of import, job creation, completion of products basket and so on have led to appearance of this component with the weight value of 3.92. and this issue is indicative of attraction of intellectual assets based products mediated by the exclusive social indices.

6-Technical Assessment

Also, in technical assessment there are several factors with positive impact including fundamental intellectual ownership in sciences or other products, relative advantages of intellectual ownership, and so on and a few number of indices have been occurred with negative effects, including rate of importance of technology achievement methods, rate of importance, idea production methods, etc.

7-Market Valuation

Also, this component has been manifested itself within price influencing factors with a high weight value about 3.98, such that it can be stated that all of indices have appeared by positive impact and this it asserts the high importance of market after that of the strategic factors.

8-Materialization of the Laboratory Stage

In this stage also most of indices appeared with positive effect on price, as observed, so that the weight value of laboratory test stage is 3.71 indicating the significance of this stage.

Results

Considering intangibility, diversification and rapid growth of various intellectual properties, it seems that there is no general method to calculate the value of such properties. Although each of the existing common methods for valuation of a particular type of such assets is applicable, the method of valuation of competitive advantages is more common for valuation of various types of intellectual properties.

Additionally, I believe that any model of visible asset valuation can be changed to intangible assets valuation if you manipulate its variables. Nevertheless, it is not easy and requires adequate knowledge in the field of intangible properties valuation. Genetic algorithm, nervous network systems etc are among methods applied for intellectual properties valuation.[16] Although the aforementioned methods reduce valuation problems to a certain extent, there is still no set formula or model to be used for intellectual properties valuation. On the other hand, risk rate in national economics, intellectual properties products, return of capital rate to the owner of the technology, together with monetary facilities (credit & loan) granted by governments for spreading the culture of the relevant products, amendment of intellectual property import/export regulations, opening special banks to grant facilities to manufacture products using the intellectual property, as well as establishing an organization to monitor intellectual property inventing new accounting methods for such assets, technology market (idea market) etc are among important issues that an idea owner (intellect owner) has to cope with.[17]

I should admit that despite the fact that most of the products of such assets have a long term capital return rate and high risks, but given the public's reception and favorable response and reaction to such products and comparing the value added price with traditional products provided they are sold within the maximum life of intellectual property's life span and provided there is no similar product with a better technology available, and also a newer version of such products are introduced to the market based on the knowledge-based companies at most within the next 6 months (given the life span of the technology of the product), then we can hope that the production of products based on intellectual assets would be very economic. It is worth mentioning that depending on the type of product and market different policies can be adopted to create knowledge-based businesses.

Four of such policies are explained below:[18]

1. The first policy is related to a new product which is either already available in the market or a fresh idea is introduced by an entrepreneur about it. The target market of such products is already identified and there are demands (some customers). Now it can be said a knowledge-based company will have access to its expected capital return rate if the project is coupled with technology and if demand is increased for that product.

2. The second one is related to a new product which is either already known in the market or a potential market exists but there are still no actual customers for it. The target market of such products is already identified and there are demands (some customers). Now it can be said a knowledge-based company will have access to its expected capital return rate if the project enjoys an advanced technology, also if it is possible to promote sale for that product.

It can be said a knowledge-based company will have access to its expected capital return rate if

3. The third policy is related to a new product, which is not available in the market. It is an unknown product. However, it has a potential market. You will need innovation to pave the way for the promotion of that product. Now it can be said a knowledge-based company will have access to its expected capital return rate if the project is coupled

with an extraordinary technology and if prior to introducing the technology the road is paved for the sale of that product to create a market.

4. The fourth policy is related to products that are produced through reverse engineering. In this case you face two problems:[19]

   a. There are some customers for the finished product and it has a potential market. Now it can be said a knowledge-based company will have access to its expected capital return rate if not only a market has been developed and grown for the sale of that product, but also if there is a similar product the advantage of that product compared to that of the rivals must be higher.

   b. The finished product is unavailable in the market and it is a new item in the country. It is the first time it is introduced in the country. Now it can be said a knowledge-based company will have access to its expected capital return rate only if through expansive advertisements, propaganda and promotional material it is being introduced and the road is paved for its consumption. By explaining the usefulness of it, a demand may be created. Then through reverse engineering, the innovation should be added and the process of production should be made native.

References

[1] Jorda,Karl F., 2002,"Intellectual Property Valuation The Legal Counterpart".Frankline Price,Vol.7,pp.40-52.

[2] Read,j.,2004, "valuation of technologhy".oxford university.vol.20,pp.170-171

[3]-Mard,Michael.,2000,"Intellectual Property" .The Financial Valuation group,vol.14 ,pp.10-40.

[4] Holt,D.,2003,"innovate ".Karafarin Publishers,pp.20-24

[5]Turner,j.,2000,"the valuation property assets:parameter & techniques"information technologhy.vol.40,pp.15-18.

[6] Charlottesville,Va.,2002,"Methods Of Intellectual Property Valuation ".Darden school of virginia,Vol.50,pp.1401-1440.

[7] Kharibi,J and Tabatabaeian,S.,2007," valuation methods of technologhy".Roshd Magazine,Vol.13,pp.11-19

[8] Zanjirdar,M.,2009,"Management and Module and report of intellectual investment".Asia economics of International Magazine,Vol.15,pp.15-17

[9] kathleen,a., 2003,"bringin new technologhy to market".ip magazine,vol.18,pp.200-203.

[10] Rezaei,M.,1993,"Theory of value and price".Amirkabir Publishers

[11] Orstavik,f.,2000, "valuation methods".ip magazine,vol.13,pp.203-205

[12] Sundarsanam,Sudi.,2003," Valuation of Intellectual capital and real option models ".Paper presented to PMA

[13] Smith,g.,2003, "trademark valuation".ip journal,vol.16,pp.131-134.

[14] Mcdonald,Leanne., 2004,"Realistic Valuation Of Intellectual Property Understanding Methods And Techniques For Valuing IP".Aic,Vol.20,pp.710-740.

[15] wilson,i.,2002 ,"innovation and economic performance".ip magazine,vol.13,pp.115-118.

[16] stacy,s.,2002 "Valuing intellectual property".technologhy strategies,vol.35,pp.22-25.

[17] Supra,n.,2002, " the valuation of technologhy",businees magazine,vol.14,136-137.

[18] Stiri,R and Rostami,M .,2008,"Risk and perilous of investment ". Park science and technologhy magazine, Vol.14,pp.68-72.

[19] Miller,j.,2003, "venture capital".journl of intellectual property,vol.16,pp.187-189.

[20] www.wipo.int

Appendix:

Tabel 2 : Market assessment

row	Title	Points 1-5	Reaching an I.P. market	Weight	Weight value
1	Domestic demand	5	Direct	10	0.5
2	competition market (arrival of new rivals, substitution products)	5	Direct	5	0.25
3	Bargaining competence	1	Direct	5	0.05
4	New product	1	Direct	9	0.09
5	Discount power	5	Direct	5	0.25
6	target market	5	Direct	5	0.25
7	impact of customer's age, education and social class benchmark, on the market	3	Direct	3	0.09
8	distribution channels	5	Direct	5	0.25
9	Advertisement	5	Direct	5	0.25
10	after-sale obligation & guarantee	5	Direct	5	0.25
11	marketing strategy	5	Direct	10	0.5
12	details of rivals (number, price, obstacles of input &output)	5	Direct	5	0.25
13	acquisition of market share	5	Direct	5	0.25
14	price strategy	5	Direct	10	0.5
15	customer attraction strategy	5	Direct	8	0.4
16	Sale Place	3	Indirect	5	-0.15
				100	3.98

Tabel 3: Strategic significance

	Title	Points	Relation between strategic signifinificance & intellectual property	Weight	Weight value
1	actual value	5	Direct	20	1
2	effect of ip on macroeconomy & circumstance benchmarks	5	Direct	10	0.5
3	Strategic significcance about exclusivity of products & security observation	5	Direct	20	1
4	Significance of using the product to optimize consumption	4	Direct	20	0.8
5	Significance of strategies adopted by the company	4	Direct	10	0.4
6	Tendency toward the expected competitive vlue	5	Direct	20	1
7	Total			100	4.7

Teble 4: Financial assessment

	Title	Point 1-5	relation with ip	Weight	Weight value
1	Investment volume	5	Direct	90	4.25
2	Liklihood of economic short & long term profitabililty	5	Indirect	15	-1
3				105	3.25

Table 5: Risk assessment

	Title	Points 1-5	Relation with ip	Weight	Weight value
1	Liklihood of failur in industrial production phase	4	Indirect	10	-0.4
2	Percison rate in compiling the commercial projects	4	Indirect	10	-0.4
3	Supportive regulations	5	Indirect	20	-1
4	Buyer's lack of riskability	5	Indirect	20	-1
5	Organization's backing of production	5	Indirect	10	-0.5
6	Price hike liklihood of raw material	5	direct	10	0.5
7	Liklihood of import of similar products	5	Indirect	8	-0.4
8	Liklihood of new standards being introduced for consumption of the products	3	Indirect	4	-0.12
9	Influence of adopted policies on the corporate agenda	5	direct	8	0.5
10				100	-2.82

Table 6: Value in the society

	Title	points 1-5	relation with ip	weight	weight value
1	Banning & preventing imports	5	Direct	20	1
2	Creation of employment	5	Direct	15	0.25
3	Environment protection	3	Direct	8	0.24
4	Filling the products basket	5	Direct	10	0.5
5	Meet customers' needs	5	Direct	15	0.75
6	Attractiveness to the customer	5	Direct	15	0.75
7	Circulation of publications & essays on ip	1	Direct	7	0.07
8	Public's response to prizes & honors, based on ip	4	Direct	10	0.4
				100	3.96

Table 7: EXPENSES

	Title	Points 1-5	Relation with ip	weight	weight value
1	cost of normal finished product	5	Direct	20	1
2	marekting/sale expenses	5	Direct	15	0.75
3	research expense	5	Direct	15	0.75
4	unforseen expense	5	Direct	20	1
5	special expense of ip	5	Direct	10	0.5
6	exploitation expense	5	Direct	10	0.5
7	other expenses	5	Direct	10	0.5
8				100	5

Table 8: Laboratory phase

	Title	points 1-5	relation with ip	weight	weight value
1	implementation of project benchmark	1	Indirect	10	-0.1
2	duration of project	5	Direct	8	0.4
3	cycle of project approval	2	Indirect	2	-0.04
4	access to required raw material	5	Direct	8	0.4
5	independence to rare equipment	5	Direct	10	0.5
6	required time to install & operate equipment	5	Direct	8	0.4
7	number of required samples for test & its impact on launching the project	3	Indirect	2	-0.06
8	need for international approval	5		5	0.25
9	adequecy of ip for transfer to customer	4	Indirect	3	-0.12
10	Innovation rate of the project	5	Direct	8	0.4
11	How innovative the project is	5	Direct	8	0.4
12	Allocated skilled human resources	5	Direct	8	0.4
13	Allocated budget	5	Direct	8	0.4
14	Allocated equipment	5	Direct	5	0.25
15	Life-span of project	5	Direct	5	0.25
16	Type of Commercialization	1	Indirect	1	-0.01
17	Shareholders' piece of the pie	2	Indirect	1	-0.01
18				100	3.71

Table 9: Calculating the normal level

	Title	Factor value	Optimistic weight Scenario 1	Pessimistic weight Scenario 2	Actual weight Scenario 3	Optimistic state	Pessimistic state	Actual state
1	Market status	3.98	18	12	15	0.71	0.47	0.59
2	Strategic significance	4.7	20	18	19	0.94	0.84	0.89
3	Financial assessment	3.25	10	8	9	0.32	0.26	0.29
4	Risk assessment	-2.82	8	5	6.5	-0.22	-0.14	0.18
5	Base price	5	25	18	21.5	1.25	0.9	1.07
6	Laboratory phase	3.71	14	8	11	0.51	0.29	0.4
7	Total		120	80	100			
						4.4	2.98	4.04
						5.4	3.98	5.04

Table 10: Calculating the normal level

	Title	Factor value	Optimistic weight Scenario 1	Pessimistic weight Scenario 2	Actual weight Scenario 3	Optimistic state	Pessimistic state	Actual state
1	Market status	3.98	18	12	15	0.71	0.47	0.59
2	Strategic significance	4.7	20	18	19	0.94	0.84	0.89
3	Financial assessment	3.25	10	8	9	0.32	0.26	0.29
4	Risk assessment	-2.82	8	5	6.5	-0.22	-0.14	-0.18
5	Base price	5	25	18	21.5	1.25	0.9	1.07
6	Laboratory phase	3.71	14	8	11	0.51	0.29	0.4
7	Value in the society	3.96	18	6	12	0.71	0.23	0.47
8	Technical assessment	2.63	7	5	6	0.18	0.13	0.15
9	Total		120	80	100	4.4	2.98	4.04