

SIMON KUZNETS KHARKIV NATIONAL UNIVERSITY OF  
ECONOMICS

The main theoretical statements of the information interaction of  
enterprises with partners

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## **Theoretical principles of informational interaction of the enterprise with the external environment for formation, support and growth of a positive image**

**1. Informational interaction of the enterprise** with the external environment is a two-way symmetric model of the active transfer of the information about the achievements and opportunities of each according to changes in their representations and expectations of the benefit in accordance with the objectives.

**2. The purpose of the informational interaction is to harmonize the interests of the enterprise with the interests of environmental entities**, from which depends the success of its activities in particular and development in general, on the basis of creating an **attractive image**, based on an **objective component**, characterized by **the use of all types of economic resources of the enterprise and its development opportunities for the investment-innovation direction**, and the **subjective component**, which is formed by creating a **positive perception of the enterprise**, respectively with the goals, stereotypes of the subjects of the market, which has an influence on the process of forming the image of the enterprise.

**3. The basis of the attractive image of the subject is informational transparency** about financial and property status, commercial and managerial opportunities and achievements.

**4. Informational interaction** should be built on the basis of **integrated communications**, main components of which are measures of **PR-policy, advertising, individual work with priority partners**. The choice of a particular component depends on the level of image achieved by the objective and subjective components.

**5. Activities of PR-policy** should **constantly** accompany the activities of the enterprise. **Advertising and individual work** should be used in case of preparation for **implementation of new developments, entering new markets**, besides, **individual work** will be useful in the process of interaction with the priority, that is, **influential partners**.

**6. PR-actions** should be conducted in accordance with the system of strategies based on **the economic achievements of the enterprise and the perceptions** of the external environment subjects about it.

**7. Advertising** should both maintain an attractive image of the company and be carried out in accordance with **the information and image** strategy, and motivate the partners to expand the relationship with the enterprise, that is, to implement a **stimulating strategy**.

**8. Individual work** with potential and real partners and other priority actors and groups should take into account both their **economic interests and benefits as well as socio-psychological as well as cultural representations and stereotypes of thinking** (concerning partners - individuals or owners, managers - legal entities), which requires the reflection in the information reports of the results of the use of economic resources, investment and innovation activities as conditions of the enterprise development, according to the behavior motives of specific individuals and their goals.

The **image of the enterprise** is the representation of the subjects of the internal and external environment about its **brand**, created with the help of **means of information communications** about **the achievements and opportunities of the enterprise**, formed under the influence of objective and subjective factors.

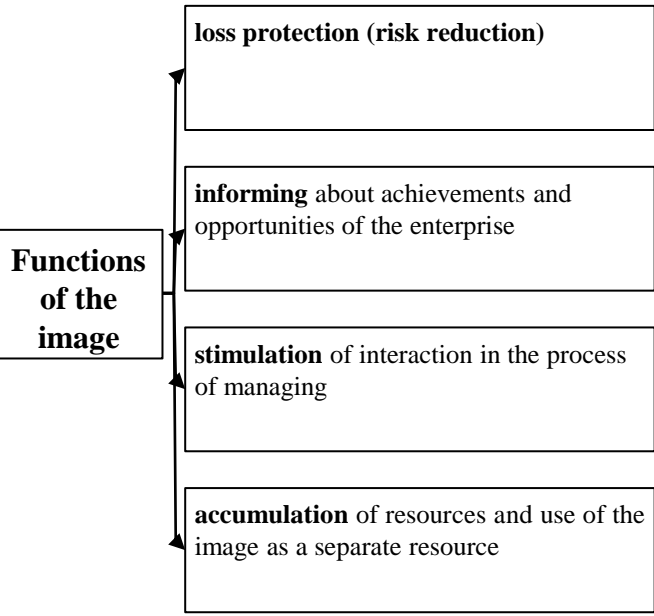


Fig. 1 Image Functions

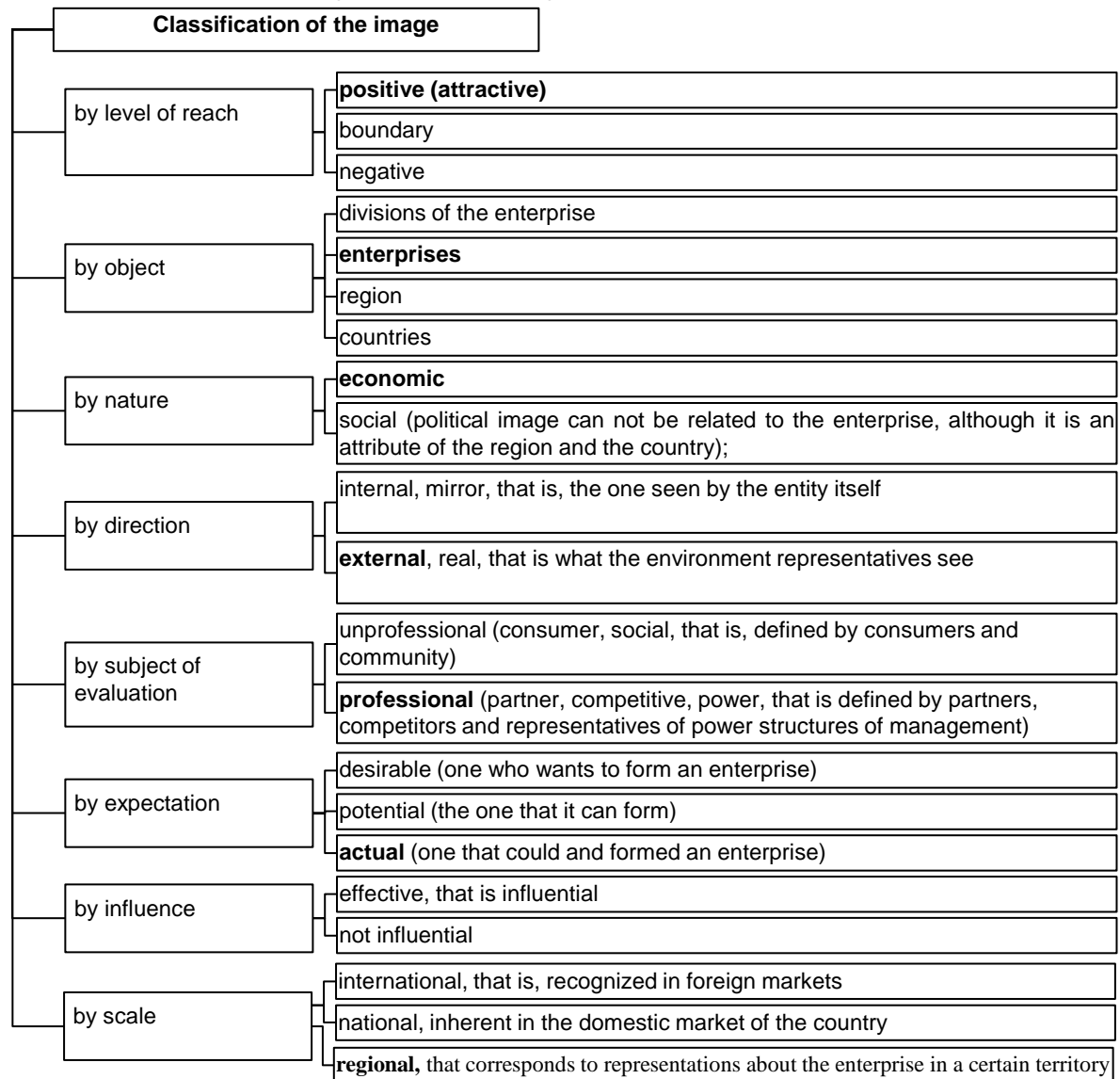


Fig. 2 Classification of the image

### Sections of the feasibility study for the formation, support and growth of the image

- 1. General parameters**, which should include definition of image, **description of its components, purpose of implementation, competitive advantages** over similar competing enterprises, **expected effects of impact** on market actors.
- 2. The production section**, in which it is necessary to **reconcile the purpose of the image with the possibilities of production of those types of products** that will be used by it, namely: the type of production with a detailed description of its characteristics, the quality of products (primarily functional, that is expected by consumers), terms and volumes of its production and supplies, nomenclature, tariffs and prices, which will depend on the accepted effective promotion policy on the external market.
- 3. The marketing section** should contain the full and abbreviated **name of the company's brand, slogan, logo, heraldry attributes, and the same attributes of trademarks** that underlie the image of the enterprise. These attributes should be consistent with the active needs of potential partners and consumers on the market for further information interaction.
- 4. An investment section** in which it is expedient to place information on **expenses for the formation of a positive image** on the market, as well as the probable additional **profits from its use** by the enterprise directly and as a separate investment resource for other business structures. The important information of this section should be **calculated future value of the company, taking into account the influence of the image** on the subjects of the environment through quantitative determination of the probable level of its attractiveness.
- 5. The legal section**, which aims to **distinguish between copyright, property, and related rights of owners and authors of the formed concept of image**, the distribution of the share of liability of the parties for claims, the results of legal expertise for compliance with national and international standards for its simulation, contradictions, plagiarism.
- 6. The cultural-historical section** must contain the justification for introducing **the image according to the cultural, religious, and historical traditions** of the external market actors, which is intended to bring the enterprise and probable types of satisfaction for legal entities and individuals in accordance with their active needs.
- 7. The psychological section** is obligatory, because the very implementation of the envisaged in it will allow to turn the trademarks into images and synthesize from them a new socio-economic quality - directly the image that will be the basis and then grow into a positive image. In this section, it is advisable to place **psychological methods of influencing** market actors in order to popularize the company and the most likely consequences of their actions.
- 8. The futurist section** must be constructed in such a way that it contains **information about the future general prospects for developing an image** of the enterprise and competitors that may pose a threat, a forecast of changes in the social, economic, psychological state of direct contact with the enterprise and new groups of market participants, future paths and methods of direct and indirect influence on them.

## System performance analysis of engineering enterprises of Kharkiv region

Table 1

## Performance of engineering companies in the Kharkiv region

Characteristic	Indicator code	Characteristic	Indicator code
<b>Resource direction</b>		<b>Innovative direction</b>	
Financial resources		Indicators of innovation activity	
Absolute liquidity ratio	X1	The share of workers performing scientific and technical work	X27
Return on total capital	X2	The share of current expenditure on technological innovation in the total expenditure on innovation	X28
Net profitability of sales	X3	The share of long-term investment in technological innovation in the total amount of innovation costs	X29
Capital turnover ratio	X4	The share of expenditure on research and development (excluding depreciation) in total spending on innovation	X30
Financial stability ratio	X5	The share of expenditure on technological preparation of production in total spending on innovation	X31
Factor mobility of capital	X6	The share of spending on machinery, equipment, tools, other fixed assets and capital costs associated with the introduction of innovations in total spending on innovation	X32
Financial risk factor	X7	The share of own investments in technological innovation in the total amount of investment in innovation	X33
Material resources		The share of budget investment in technological innovation in the total amount of investment in innovation	X34
Ratio of fixed assets	X8	The share of other sources of innovation financing in the total amount of investment in innovation	X35
Fixed asset refresh rate	X9	The share of innovative products in the total volume of shipped products	X36
Return on assets	X10	The share acquired new technologies in Ukraine in total purchases	X37
Capital-labor ratio	X11	The share of purchased new technologies abroad in the total volume of acquisitions	X38
The share of material costs in the cost of production	X12		
Human resources			
The share of full-time employees	X13		
The share of workers aged 29 to 50 years	X14		
The share of employees graduated from the university	X15		
The share of workers trained in new professions	X16		
The share of workers who increased their qualifications in the reported year	X17		
The share of labor costs in total production costs	X18		
Average annual output per worker	X19		
Informational resources			
The share of investment to the fixed capital in total capital	X20		
The share of investment to the intangible assets in the total volume of fixed capital investments	X21		
The share of investment to the innovation to total investment in fixed assets	X22		
The share of investments to the informatization in the total volume of investments	X23		
The share of investment to the software in the total amount of investment in informatization	X24		
The share of spending on marketing and advertising in the total expenditure on innovation	X25		
The share of investment into the computing in the total amount of investment in informatization	X26		

## The results of multidimensional factor analysis on the activities of 24 machine-building enterprises for the period 2015-2021

Table 1

Results of multidimensional factor analysis according to the resource direction of activity of enterprises

Factor	The value of the factor	Dispersion, %	The accumulated dispersion, %
1	2,75836	18,089	18,089
2	2,46033	16,135	34,224
3	2,21679	14,538	48,762
4	1,67315	10,972	59,734
5	1,62949	10,686	70,420
6	0,99628	6,534	76,954
7	0,851268	5,583	82,536

Table 2

Factor loads of indicators for the resource direction of enterprises

Indicator	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7
X1	0,018738	-0,061003	0,0378096	0,0600711	0,0866954	0,453725	-0,0267575
X2	-0,0528281	-0,0301763	0,255894	<b>0,546372</b>	0,0944352	0,190193	-0,192117
X3	-0,0649559	0,0446629	0,0202505	<b>0,841687</b>	0,0393561	-0,0532802	-0,0488897
X4	0,0335674	-0,0565382	<b>0,504535</b>	0,144603	-0,137152	0,17676	0,261997
X5	-0,017678	0,0370821	-0,0165656	0,042056	-0,0424482	<b>0,692144</b>	-0,0170458
X6	<b>0,954702</b>	-0,0393631	-0,0304221	-0,185897	-0,0663037	0,0562347	0,0249157
X7	<b>-0,973959</b>	0,0190675	0,0798335	0,0988686	0,0353106	0,0321063	0,00252847
X8	0,0309735	0,25476	0,335255	0,0866516	0,024788	<b>0,512065</b>	0,217316
X9	0,022077	<b>0,985143</b>	0,0549176	0,0409848	0,0196951	-0,00291378	-0,0179149
X10	0,0464169	<b>0,894921</b>	0,171667	0,0647515	0,0564094	-0,0512672	-0,0810397
X11	-0,000882585	-0,0339234	0,00600741	-0,226501	0,00340872	0,00071009	-0,0409522
X12	0,0524553	0,0610308	0,0733701	<b>-0,803805</b>	0,0175599	-0,130466	0,00110656
X13	0,0720391	0,0121289	0,323224	0,138924	0,0157827	0,188796	0,239723
X14	0,00609297	0,160395	-0,443835	0,193559	-0,0569124	-0,161263	-0,0302723
X15	0,120835	-0,0392638	0,000594915	0,0159933	0,0865654	0,0870437	-0,18694
X16	0,00935951	0,00205878	<b>0,516867</b>	-0,00204276	-0,00492294	-0,0291353	0,0180537
X17	-0,0519531	0,0682919	0,323252	0,0349199	0,0312208	-0,214308	0,0534142
X18	0,110851	-0,0846009	<b>-0,536901</b>	0,0481793	-0,0474227	0,0815248	0,0372088
X19	-0,0109342	0,0525953	<b>0,747863</b>	0,0759096	-0,0398192	0,159684	-0,0206123
X20	-0,0491278	<b>0,594011</b>	-0,139917	-0,020419	-0,105051	0,0645291	0,130776
X21	-0,0200952	0,0162963	-0,0530153	0,00740685	<b>0,813569</b>	0,0481422	-0,108188
X22	0,177652	-0,0740637	0,339965	0,0599723	0,326068	0,132333	0,00571221
X23	-0,0223567	-0,0460861	0,0417369	0,0450621	<b>0,789911</b>	-0,0295341	<b>0,528961</b>
X24	<b>0,598357</b>	0,0537574	0,0115513	0,0602105	0,0752912	0,00184392	0,0208678
X25	0,205028	-0,0748369	0,0601056	0,0688924	0,234527	-0,106688	<b>0,767992</b>
X26	0,0107573	-0,032962	-0,0470468	0,0542076	0,00976859	-0,0945922	-0,172893

Table 3  
Results of multidimensional factor analysis according to investment and innovation activity of enterprises

Factor	The value of the factor	Dispersion, %	Accumulated dispersion, %
1	2,69498	31,522	31,522
2	2,10611	24,634	56,156
3	1,6326	19,096	75,251
4	1,18657	13,879	89,130

Table 4  
Factor loads of indicators based on the results of multidimensional factor analysis according to the innovative direction of activity of enterprises

Indicator	Factor 1	Factor 2	Factor 3	Factor 4
X27	0,037123	-0,0633635	<b>0,766093</b>	0,115372
X28	<b>0,892122</b>	0,0105585	0,149307	-0,0693077
X29	0,0225569	0,203346	-0,0263541	<b>0,796057</b>
X30	0,133616	-0,0243301	<b>0,769376</b>	-0,00162022
X31	<b>0,817126</b>	0,028384	-0,112666	-0,143358
X32	0,0643819	0,0172988	0,0814735	<b>0,822807</b>
X33	<b>0,670542</b>	-0,00194553	0,159451	0,334533
X34	0,0390366	-0,0237007	0,310596	0,00955658
X35	-0,019393	0,0304867	<b>0,719103</b>	-0,00706105
X36	<b>0,516722</b>	0,16818	0,126761	0,319266
X37	0,0726284	<b>0,962299</b>	-0,0510884	0,115136
X38	0,050982	<b>0,963971</b>	-0,0545562	0,125467

## Results of multidimensional factor analysis of 24 machine-building enterprises for 2015 - 2021 regarding the objective component of the image

Table 1

### Characteristics of factors

Factor	The value of the factor	Dispersion	Accumulated dispersion
1	3,88106	18,142	18,142
2	2,54098	11,878	30,021
3	2,39567	11,199	41,219
4	2,16562	10,123	51,343
5	1,83325	8,570	59,913
6	1,75622	8,210	68,122
7	1,61046	7,528	75,650
8	1,35834	6,350	82,000
9	0,902908	4,221	86,221
10	0,822564	3,845	90,066

Table 2

### The system of partial performance objective evaluation component engineering enterprise image

Factor number	The name of the factor	The most significant factors of the factor	Indicator code
1	Financing research and development and technological innovations in the strategic period	1. Average annual output per worker 2. The share of long-term investment in technological innovation in the total amount of innovation costs 3. The share of research and development costs in the total amount of innovation costs	X19 X29 X32
2	Financing technological innovations in the current period	1. The share of current expenditure on technological innovation in the total expenditure on innovation 2. The share of expenditure on technological preparation of production in total innovation expenditure 3. The share of own investments in technological innovation in the total amount of investment in innovation	X28 X31 X33
3	Updating and using fixed assets	1. Fixed asset refresh rate 2. Return on assets	X9 X10
4	Maneuverability and risk of using financial resources	1. Factor mobility of capital 2. Financial risk factor	X6 X7
5	The acquisition of new technologies	1. The share of purchased new technologies in Ukraine in the total volume of acquisitions 2. The share of new technologies acquired abroad in the total volume of acquisitions	X37 X38
6	Investing in research and development	1. The share of workers performing scientific and technical work 2. The share of research and development costs in the total amount of innovation costs 3. The share of other sources of innovation financing in the total amount of investment in innovation	X27 X30 X33
7	Profitability	1. Return on total capital 2. The share of material costs in the cost of production	X2 X12
8	Costs of informatization and informing of the environment	1. The share of investments in informatization in the total volume of investments 2. The share of marketing and advertising costs in the total amount of innovation costs	X23 X25
9	Acquisition of intangible assets	1. The share of investments in intangible assets	X21
10	Suitability of fixed assets	1. Ratio of fixed assets	X8



## Integral index of the objective component of the image of the enterprise (OS)

$$OC = \sum_{i=1}^n K_{\phi i} \frac{X_{\phi i}}{X_{emi}}$$

$K_{\phi i}$  – the coefficient of significance of the i-th partial indicator of the objective component of the image;

$X_{\phi i}$  – the actual value of the i-th partial indicator of the objective component of the image;

$X_{emi}$  – the reference value of the i-th partial indicator of the objective component of the image;

$n$  – number of partial indicators of the objective component of the image (21 partial indicator).

Table 1

Integral indicator of the objective component of the image of the enterprises of mechanical engineering of Kharkiv region for 2015 - 2021

№	The name of the enterprise	Integral indicator of the objective component of the company's image over the years						
		2015	2016	2017	2018	2019	2020	2021
1	SE «Plant «Electrotyazhmash»	0,310	0,238	0,384	0,231	0,2062	0,264	0,283
2	OJSC «Hydroprivod»	0,285	0,283	0,353	0,298	0,317	0,271	0,244
3	CJSC «Plant «PivdenKabel»	0,339	0,340	0,354	0,458	0,315	0,392	0,397
4	OJSC «Electromachine»	0,123	0,129	0,196	0,173	0,266	0,301	0,301
5	OJSC «Plant «Ukrelectromash»	0,075	0,193	0,284	0,308	0,225	0,286	0,393
6	OJSC «Kharkiv plant of aggregates»	0,206	0,286	0,304	0,265	0,247	0,212	0,224
7	OJSC «Kharkiv machine-tool plant»	0,193	0,201	0,115	0,261	0,242	0,196	0,177
8	OJSC«Kharkiv factory of technological equipment»	0,257	0,329	0,471	0,309	0,275	0,241	0,282
9	OJSC «Kharkiv factory of stamps and molds»	0,124	0,217	0,275	0,375	0,274	0,235	0,261
10	OJSC «Turbocompressor Plant»	0,228	0,178	0,267	0,292	0,328	0,141	0,195
11	OJSC «Frunze plant»	0,342	0,294	0,290	0,449	0,441	0,247	0,263
12	OJSC «Avtramat»	0,298	0,222	0,302	0,413	0,237	0,452	0,318
13	CJSC «Lozovsky Plant» Traktorodetal»	0,277	0,242	0,245	0,479	0,252	0,349	0,343
14	CJSC «Plant» Red October»	0,373	0,275	0,347	0,335	0,328	0,214	0,308
15	OJSC «LKMZ»	0,048	0,255	0,239	0,292	0,258	0,267	0,343
16	CJSC «Chuguev Fuel Equipment»	0,086	0,274	0,331	0,384	0,346	0,215	0,302
17	OJSC «KhTZ im S. Ordzhonikidze»	0,322	0,311	0,383	0,467	0,261	0,299	0,315
18	OJSC «KhZTD»	0,270	0,255	0,277	0,258	0,213	0,138	0,150
19	OJSC «Turboatom»	0,360	0,354	0,399	0,415	0,255	0,336	0,331
20	Kharkiv State Aviation Enterprise	0,329	0,440	0,455	0,250	0,280	0,177	0,174
21	OJSC «Kharkiv Instrumental Plant»	0,299	0,212	0,277	0,242	0,253	0,287	0,209
22	OJSC «Kharkiv Bearing Plant»	0,248	0,257	0,374	0,289	0,294	0,341	0,329
23	JSC NPP «Turboenergосervice»	0,128	0,120	0,144	0,016	0,180	0,063	0,066
24	JSC SPE «Svstem»	–	–	0,058	0,029	0,051	0,044	0,012

The use of neural networks to predict the objective component of the image of industrial enterprises

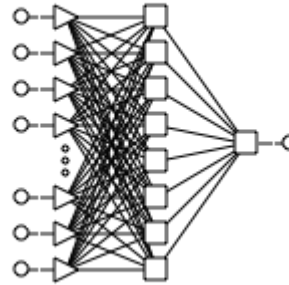


Fig. 1. Graphic representation of the best model of multi-level perceptron

Table 1

Characteristics of the quality of the model

Characteristic	Symbolic designation	Tr. VAR14
Average value of the output	Data Mean	0.09288
Mean quadratic deviation of the values of the original index	Data S.D.	0.0699521
Error mean benchmarks	Error Mean	7.856e-06
The mean square deviation of the values of the error of the original index	Error S.D.	0.001806
Absolute average error of the values of the original index	Abs E. Mean	0.00147
Coefficient of Error S.D. to Data S.D.	S.D. Ratio	0.0258158
Correlation coefficient	Correlation	0.9996667

Table 2

Analysis of the sensitivity of the indicators of the multilevel perceptron model

	X3	X6	X7	X8	X9	X12	X19	X23	X25	X27
Rank	14	11	7	9	18	19	15	12	16	8
Error	0.005735	0.007168	0.01121	0.008801	0.002902	0.002336	0.004998	0.006442	0.003814	0.009446
Ratio	3.196389	3.995015	6.247664	4.905609	1.617245	1.302071	2.785544	3.59069	2.125937	5.264894
	X28	X29	X30	X31	X32	X33	X35	X37	X38	
Rank	1	4	6	3	5	2	13	10	17	
Error	0.02241	0.01293	0.01227	0.01317	0.01252	0.01534	0.006117	0.007668	0.003714	
Ratio	12.48858	7.20733	6.838212	7.342156	6.979955	8.552842	3.409644	4.273838	2.070064	

Table 3

Forecast of the value of the integral index of the objective component of the image of enterprises in 2023 (model of multilevel perceptron)

Enterprise	Integral indicator
SE «Plant «Electrotyazhmash»	0,3543443
OJSC «Hydroprivod»	0,3446154
CJSC «Plant «PivdenKabel»	0,4426544
OJSC «Electromachine»	0,3878544
OJSC «Plant «Ukrelectromash»	0,4976628
OJSC «Kharkiv plant of aggregates»	0,3452583
OJSC «Kharkiv machine-tool plant»	0,2544432
OJSC«Kharkiv factory of technological equipment»	0,3754488
OJSC «Kharkiv factory of stamps and molds»	0,3794457
OJSC «Turbocompressor Plant»	0,2846434
OJSC «Frunze plant»	0,3242643
OJSC «Avtramat»	0,4388822
CJSC «Lozovsky Plant» Traktorodetal»	0,4394536
CJSC «Plant» Red October»	0,4154246
OJSC «LKMZ»	0,4293792
CJSC «Chuguev Fuel Equipment»	0,3882432
OJSC «KhTZ im S. Ordzhonikidze»	0,3938223
OJSC «KhZTD»	0,2536766
OJSC «Turboatom»	0,4241249
Kharkiv State Aviation Enterprise	0,2715464
OJSC «Kharkiv Instrumental Plant»	0,3161716
OJSC «Kharkiv Bearing Plant»	0,3564742
JSC NPP «Turboenergосervice»	0,2368456
JSC SPE «System»	0,1945675

### **Characteristics of a positive image**

- integrity and consistency with both the mission of the enterprise and the network image of the business partners;
- objectivity;
- relative stability to the influence of negative relevant environmental factors;
- reflexivity to sensitive events; some simplicity of presentation according to the readiness of the audience;
- personalization according to the opportunities and achievements of the enterprise and expectations of the audience.

## Characteristics of the subjective component of the image of the enterprise

Table 1

Characteristics of the image of the enterprise by the subjective component

№	The name of the characteristic	Specific weight of answers of experts, who recognized the characteristic of influence, %	Component of image
1.	Brand of the enterprise	86,5	commercial
2.	Products (quality, price, innovation, serviceability, service, warranty, delivery conditions)	85,9	
3.	Export volume	75,8	
4.	The situation on the domestic market	79,5	
5.	Business partners fame	69,7	
6.	Property status	64,8	financial and property
7.	Transactions with shares of the company on stock exchanges	58,9	
8.	Financial position	79,3	
9.	Competitiveness on the market	74,3	managerial
10.	Government support	63,2	
11.	Professionalism of managers and owners	84,8	

Table 2

Quantitative value of components of the company's image

№	The name of the characteristic	The weighting factor of the characteristic	The name of the component	The average value of a component and per one characteristic
1.	Brand of the enterprise	0,14	commercial	0,49 (per one characteristic – 0,098)
2.	Products (quality, price, innovation, serviceability, service, warranty, delivery conditions)	0,10		
3.	Export volume	0,08		
4.	The situation on the domestic market	0,09		
5.	Business partners fame	0,08		
6.	Property status	0,06	financial and property	0,20 (per one characteristic – 0,067)
7.	Transactions with shares of the company on stock exchanges	0,05		
8.	Financial position	0,09		
9.	Competitiveness on the market	0,11	managerial	0,31 (per one characteristic – 0,103)
10.	Government support	0,08		
11.	Professionalism of managers and owners	0,12		

### Integral index of the subjective image component (SS)

$$CC = \sum_{i=1}^n K_{zhi} \frac{X_{\phi i}}{X_{emi}}$$

$K_{zhi}$  – the coefficient of significance of i-th characteristic of the subjective component of the image;  
 $X_{\phi i}$  – the actual value of the i-th characteristics of the subjective component of the image;  
 $X_{emi}$  – reference value of the i-th characteristics of the subjective component of the image;  
 $n = 11$  suggested characteristics of the subjective component of the image.

Table 1

The value of integral indicators of the image of enterprises by subjective component

Enterprise	Integral indicator of the image by an objective component
SE «Plant «Electrotyazhmash»	0,2542432
OJSC «Hydroprivod»	0,3346053
CJSC «Plant «PivdenKabel»	0,2416543
OJSC «Electromachine»	0,2878544
OJSC «Plant «Ukrelectromash»	0,3976618
OJSC «Kharkiv plant of aggregates»	0,2351582
OJSC «Kharkiv machine-tool plant»	0,1543321
OJSC«Kharkiv factory of technological equipment»	0,2754488
OJSC «Kharkiv factory of stamps and molds»	0,2793357
OJSC «Turbocompressor Plant»	0,1846423
OJSC «Frunze plant»	0,2141632
OJSC «Avtramat»	0,3288811
CJSC «Lozovsky Plant» Traktorodetal»	0,3294526
CJSC «Plant» Red October»	0,3053136
OJSC «LKMZ»	0,3192791
CJSC «Chuguev Fuel Equipment»	0,2881321
OJSC «KhTZ im S. Ordzhonikidze»	0,2928112
OJSC «KhZTD»	0,1526766
OJSC «Turboatom»	0,3140149
Kharkiv State Aviation Enterprise	0,1705363
OJSC «Kharkiv Instrumental Plant»	0,2060706
OJSC «Kharkiv Bearing Plant»	0,2564741
JSC NPP «Turboenergосervice»	0,1268356
JSC SPE «System»	0,1055125

### **Recommendations for using the brand of sites to enhance the company's image based on the subjective component**

- **simple site navigation** by its name, which is appropriate to reconcile with the name of the enterprise, use it completely or apply keywords, because brand sights that are difficult to find will be perceived as unfriendly to the outside environment;
- **internal navigation** in the brand site should be provided with a sufficient **speed, useful from objective (rational) and subjective (emotional) positions** and accompanied by a three-dimensional multimedia image;
  - use of **the latest technologies** and innovative methods of design and implementation;
  - **exchange of messages** with partners in the markets;
  - the use of **traditional media tools** to stimulate the use of online and attract new users of the site;
  - gradual construction of **individual relationships** with market representatives through interactive capabilities, which is one of the significant advantages of brand sites and their abolition from the traditional mass media, which may increase the perception of the value of the enterprise as a partner in foreign economic activity;
    - the use of **popup hypertext pages** with detailed information about the company, provided that it has a full transparency policy;
    - **regular updating** and updating of the site in order to attract attention, to form motives for action, achieve satisfaction of rational and emotional needs of users **on its basis personalization and openness** (socialization);
    - the use of **sound effects, three-dimensional space** and the required speed for reporting messages;
    - maximum personification by **e-mail**;
    - **security of e-transactions**;
    - the use of indirect incentives to use the site through the sale of its advertising space;
    - using a **search engine that has a setting**;
    - the desire to include **emotional components** in informational messages that can be realized by addressing the secondary needs of partners, or, for example, the location of personal information about the best employees of the company, which will help create the effect of information openness, ie transparency;
      - use of **network links to brand sites of other business partner projects and vice versa**;
    - **interactive build of messages** which is the main feature of brand sites and their abandonment of traditional mass media. Interactivity will increase the perception of the value of enterprise proposals, depending on the efforts that users spent on their receipt. Proactivity of information channels should consist in active communication of the enterprise with potential partners in the market, on the one hand, and in the active search of sites the last, on the other.

## Indicators and results of measuring the objective and subjective components of the image

Table 1

Indicators measuring the results of objective and subjective components of the image

Measurement Indicators	
objective components	subjective components
<b>the weight</b> of the image, which is determined by the market share for certain types of products, that is, the domination of the market	<b>ideological satisfaction</b> associated with systems of beliefs that characterize national preferences (for example, a partner is a national commodity competitor in the international market)
<b>the length of the image</b> , that is its ability to diversify into different categories of business	<b>psychological satisfaction</b> associated with the task of signing profitable contracts with priority partners
<b>power of image</b> , determines the number of new partners involved in participating in reproduction processes of the enterprise	<b>sociological satisfaction</b> associated with satisfaction of group interests, for example, increase of workplaces, development of a certain territory, ecological safety
	<b>cultural satisfaction</b> , due to the degree of unity with the organizational culture of the enterprise, national traditions

Table 2

Results of measurement of image performance by objective and subjective component (2017)

Components of measurements by indicators	OJSC «Ukrelectromash»	OJSC «Pivdenkabel»
Objective component (cognitive measurements)		
Weight	24%	28%
Length	3	3
Power	6	4
Subjective component (indicators of emotional measure of satisfaction (for 50 people polled):		
ideological	80%	78%
psychological	65%	60%
sociological	40%	40,5%
cultural.	15%	16%



### Determination of levels of enterprise image

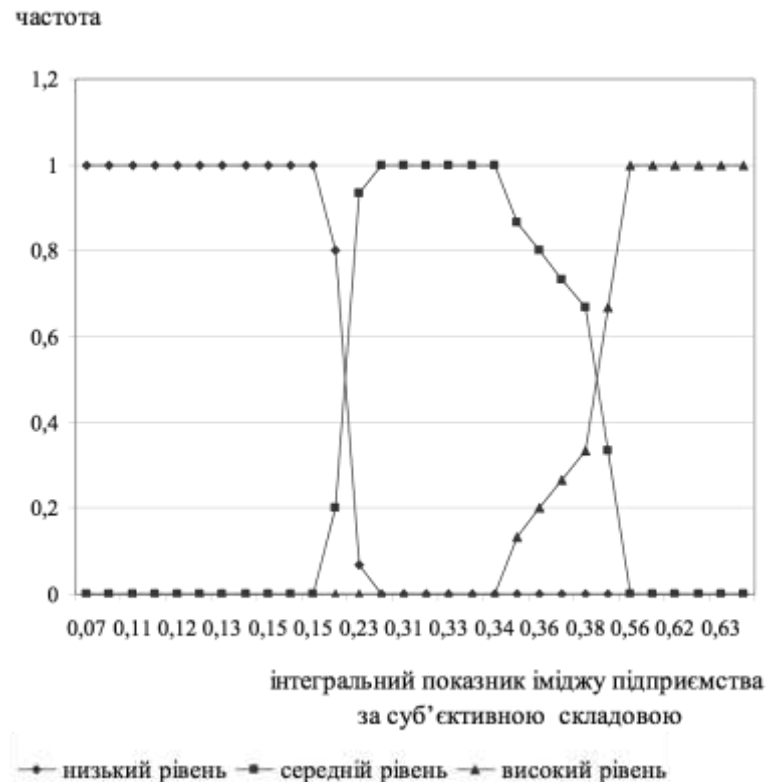
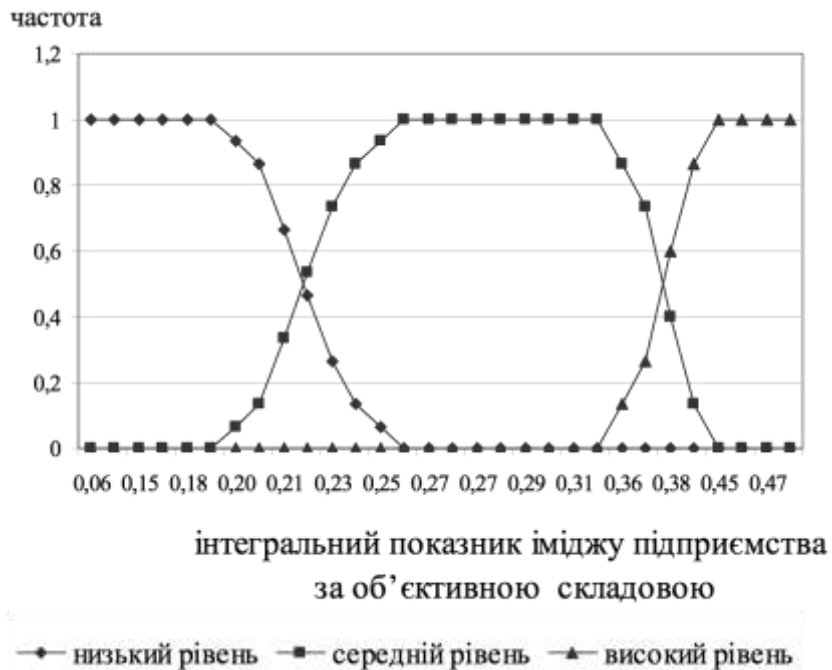


Fig. 1. The function of the integral index of the image of machine-building enterprises for the objective component to qualitative features of low, medium, high levels

Fig. 2. The function of the integral index of the image of machine-building enterprises by subjective component to qualitative features of low, medium, high levels

Table 1  
Boundaries of classes (qualitative signs) of integral indicators of the image of the enterprise by objective and subjective components

The component of the enterprise image	Quantitative values of the boundaries of qualitative characteristics				
	low	low or medium	medium	medium or high	high
Objective component	0,00; 0,186	0,186; 0,257	0,257; 0,359	0,359; 0,454	0,454; 1,00
Subjective component	0,00; 0,186	0,187; 0,288	0,288; 0,357	0,357; 0,555	0,556; 1,00

Table 3  
Distribution of enterprises by the levels of integral indicator of the objective component of the image (according to 2021) under moderate conditions

Indicator level	Number of enterprises	Specific weight
Low [0; 0,221)	1	4,17%
Medium [0,221; 0,337)	11	45,83%
High [0,337; 1]	12	50,00%

Table 5  
Distribution of enterprises by the levels of the integral index of the subjective component of the image (according to 2021) under moderate conditions

Indicator level	Number of enterprises	Specific weight
низький [0; 0,205)	6	25,00%
середній [0,205; 0,391)	17	70,83%
високий [0,391; 1]	1	4,17%

Table 2  
Intervals of integral indexes of the image by objective and subjective components under moderate conditions of differentiation

Складова іміджу	Значення інтервалу якісного рівня іміджу		
	низький	середній	високий
Об'єктивна	0,00; 0,221	0,221; 0,377	0,377; 1,00
Суб'єктивна	0,00; 0,205	0,205; 0,391	0,391; 1,00

Table 4  
Distribution of enterprises by the levels of the integral index of the objective component of the image (according to 2021 data)

Indicator level	Number of enterprises	Specific weight
Low or medium [0,186; 0,257)	4	16,67%
Medium [0,257; 0,359)	8	33,33%
Medium or high [0,359; 0,454)	11	45,83%
High [0,454; 1]	1	4,17%

Table 6  
Distribution of enterprises by the levels of the integral index of the subjective component of the image (according to 2021)

Indicator level	Number of enterprises	Specific weight
низький [0,00; 0,186)	6	25,00%
низький або середній [0,186; 0,288)	9	37,50%
середній [0,288; 0,357)	8	33,33%
середній або високий [0,357; 0,555]	1	4,17%

Table 1  
Types of information interaction strategies

Information Interaction Tool	Classification trait	Kind of strategy
PR	by object	events with the media, the territorial community, market professionals, partners
	by activity	active, moderate, dotted
	by the nature of messages	focused on the use of economic resources now or subjective understanding of the achievements of the company and its opportunities
Advertising	by advertising method	direct, mediated, depending on the mass audience of influence
	by intensity	general reminding, stimulating, content-pulsating
	by the nature of the messages	focused on the use of economic resources now or subjective understanding of the achievements of the company and its opportunities
Individual work	by the nature of the messages	aimed to use the economic resources of the enterprise, that is, on the objective component, or on the formation of personal representations of partners, that is, on the subjective component
	according to the typical needs	typical, based on performance indicators, unique, based on the atypical needs of partners regarding their personal preferences
	for active work with partners	active, moderate, passive, that is, at the request of a partner
	by the deadline for submission of information	primary, secondary, final

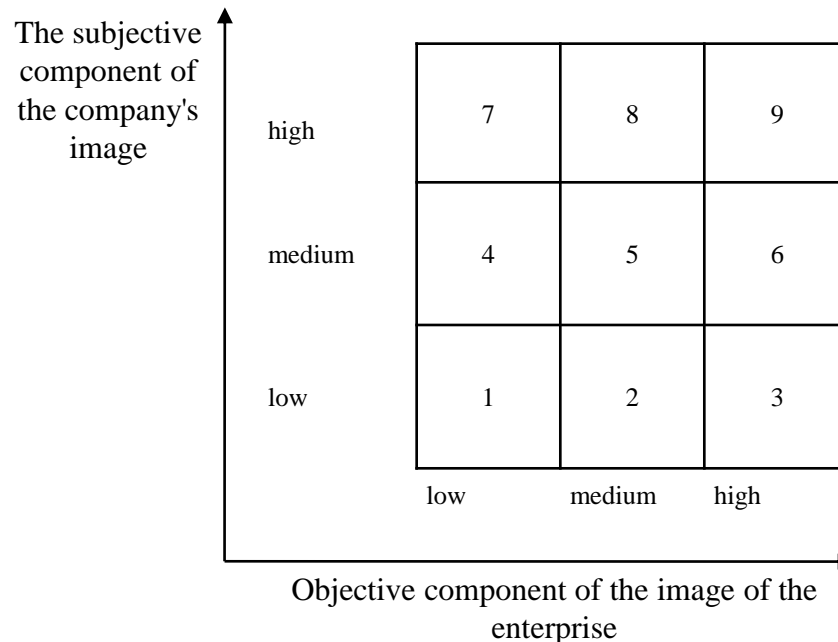


Fig. 1. Generalized matrix of image management strategies in the process of information interaction

Table 2  
Zones of the matrix strategies for managing the image of the enterprise

Quadrants	Zones	Tools
1, 2, 4	forming an image	all tools for informing partners about positive opportunities and achievements of the enterprise (PR-actions, advertising and individual work with priority partners)
3, 5, 7	growth of image	advertising and individual work, and PR-actions for professional activities
6, 8, 9	image support	individual work, which can be complemented by reminding advertising and point-specific PR-actions.

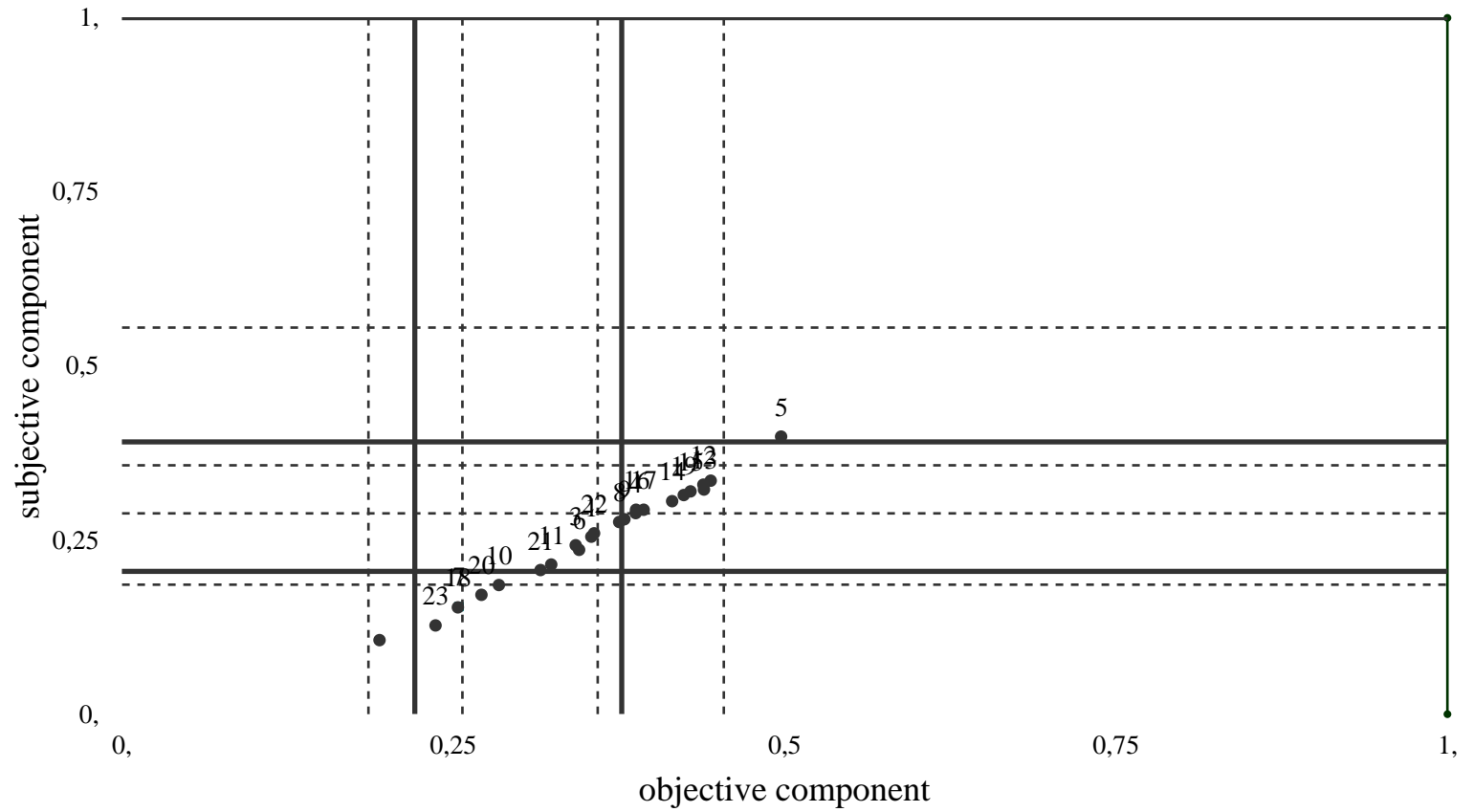


Fig. 1. Positioning of enterprises in the matrix of image management strategies

**THANK YOU FOR  
ATTENTION!**