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Экономическая теория

относительности или

«Улитка инноваций»

Innovation Snail, Triple Helix and other Processes of Economy

Economical Theory of Relatively

www.fibr.ru



Capitalization. Paradoxes:

$$\text{Capitalization} = \text{Cap}_i = \text{Price}_i * \text{Nshare}_i \quad (1)$$

$$\text{Price}_i = k_i * \text{NPV}_i \quad (2)$$

$$\text{NPV}_i = \sum \{ \text{CF}_i / (1+r)^{(n-1)} \} \quad (3)$$

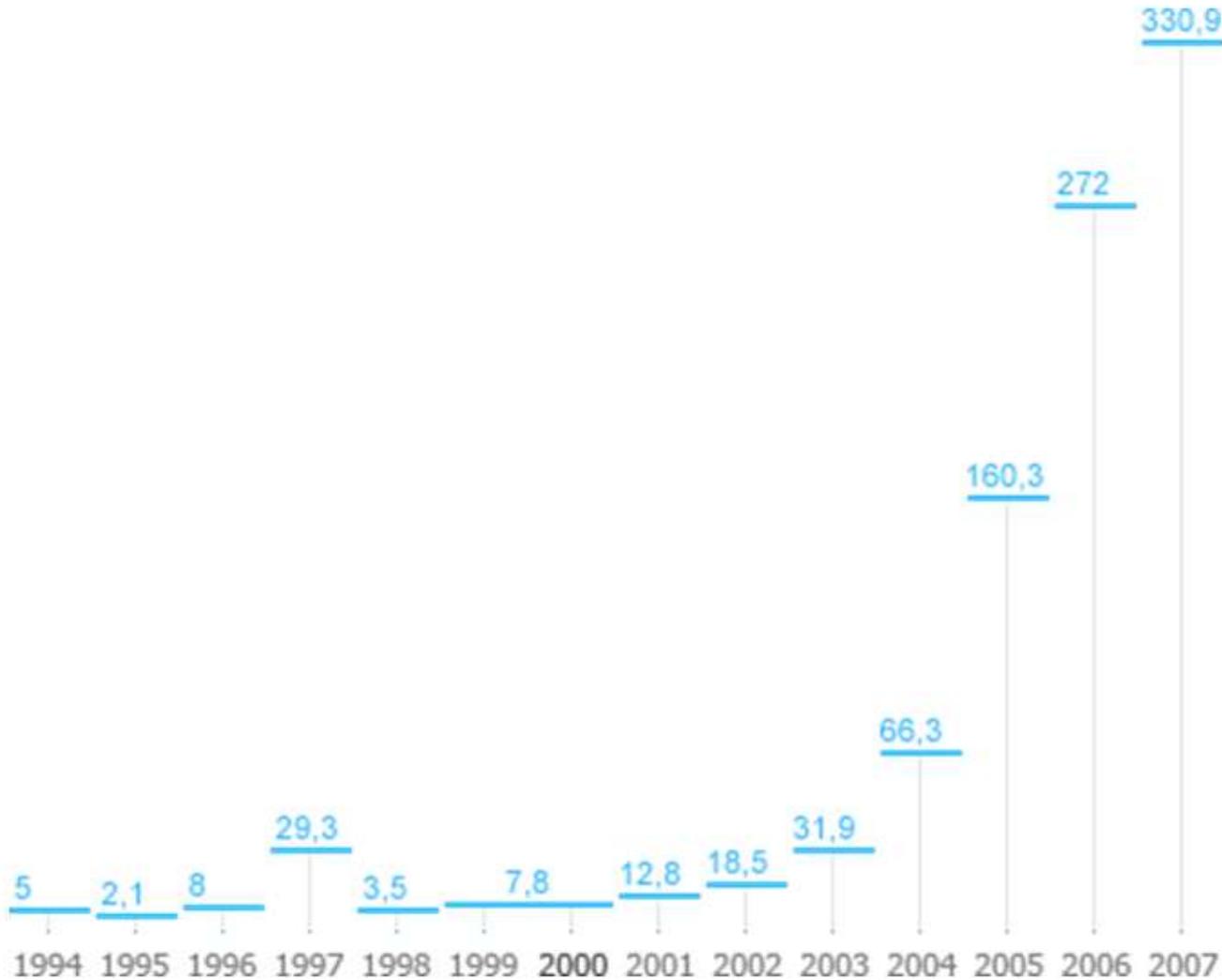
$$\text{CF}_i = \text{Revenue}_i - \text{Cost}_i - \text{Investments}_i \quad (4)$$

Capitalization, \$B: GAZPROM (Russia), 1995.

5	2,1
1994	1995

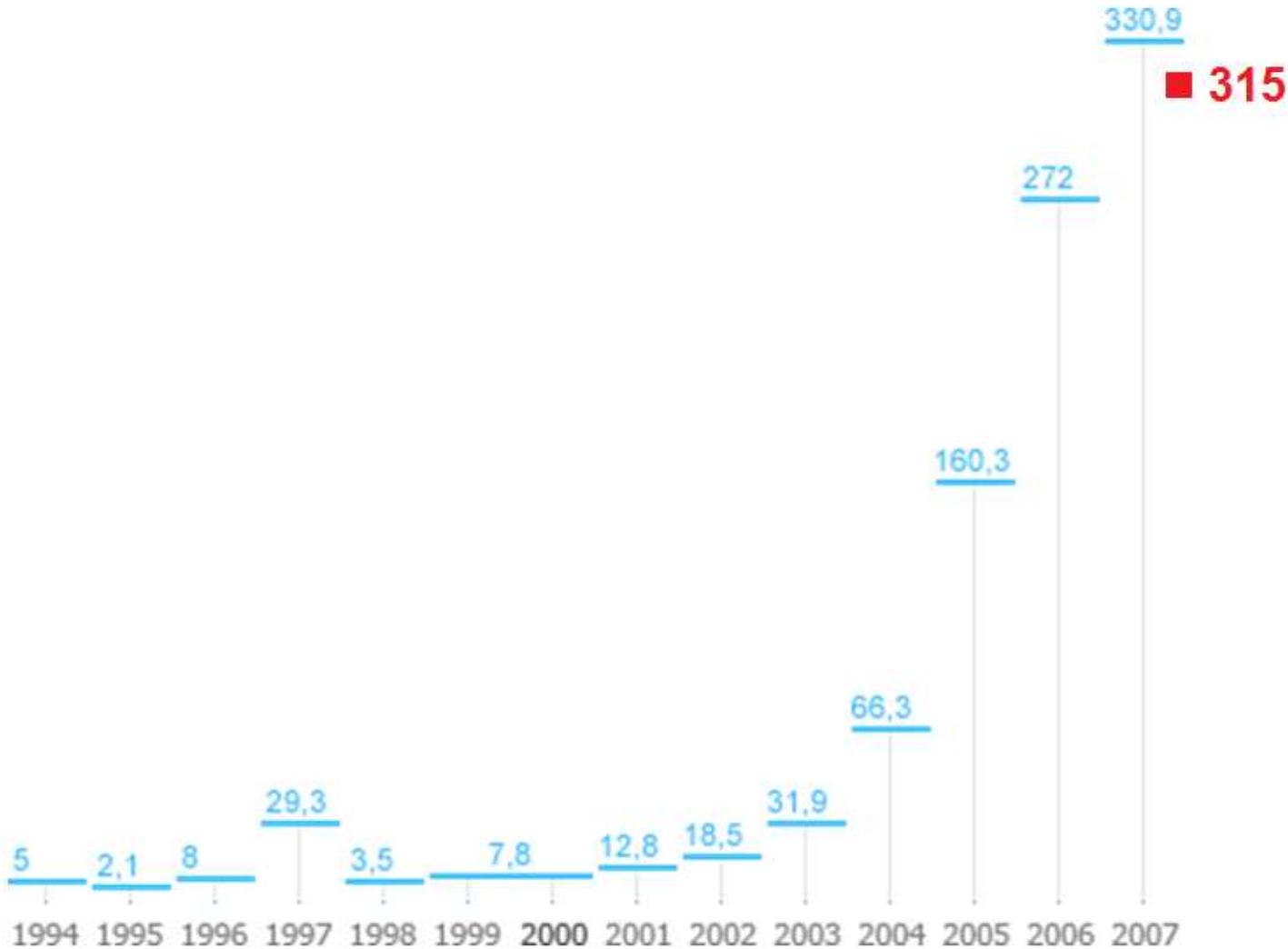
<http://investcafe.ru/companies/gazp>

Capitalization, \$B: GAZPROM (Russia), 2007.



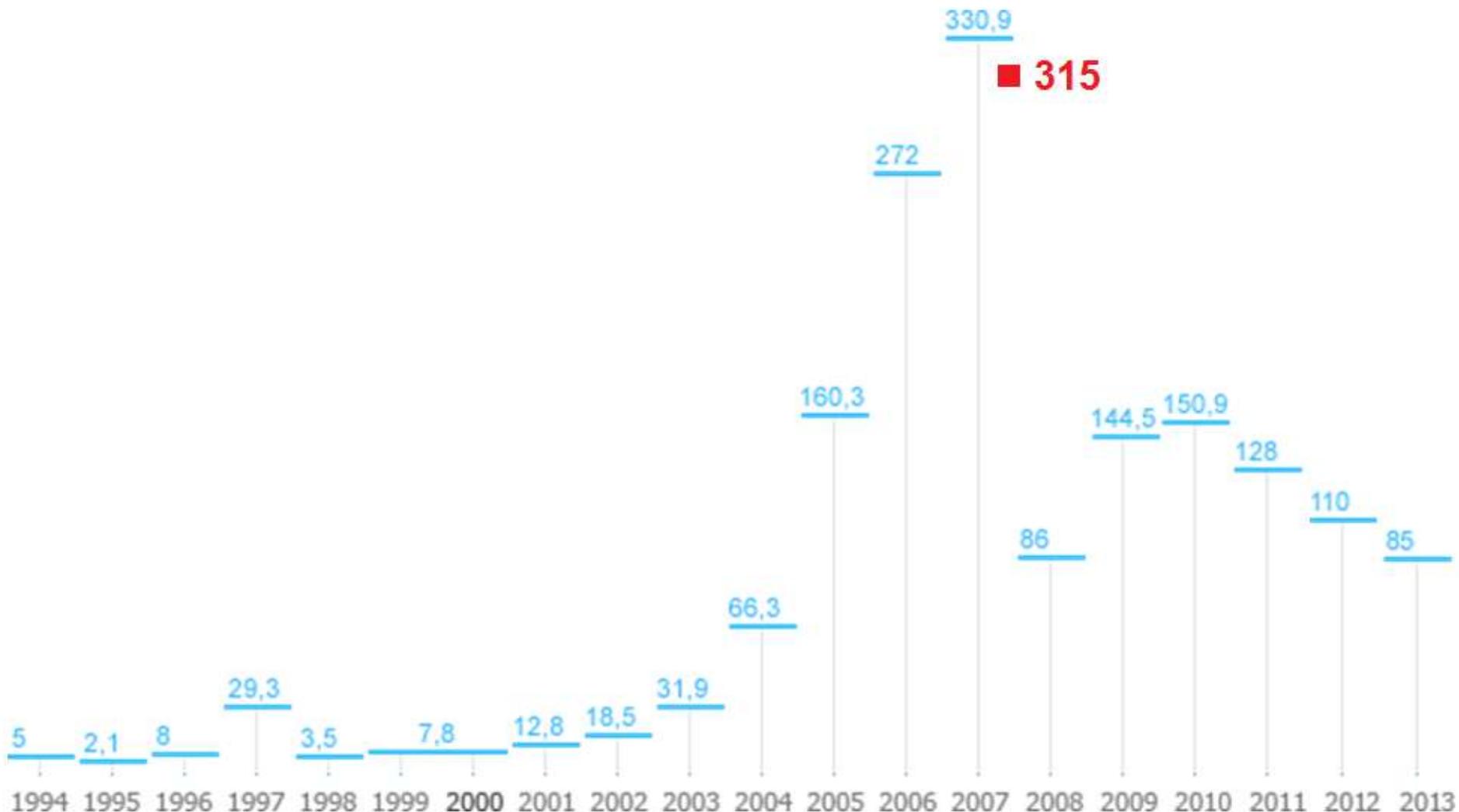
<http://investcafe.ru/companies/gazp>

Capitalization, \$B: GAZPROM (Russia), 2008.



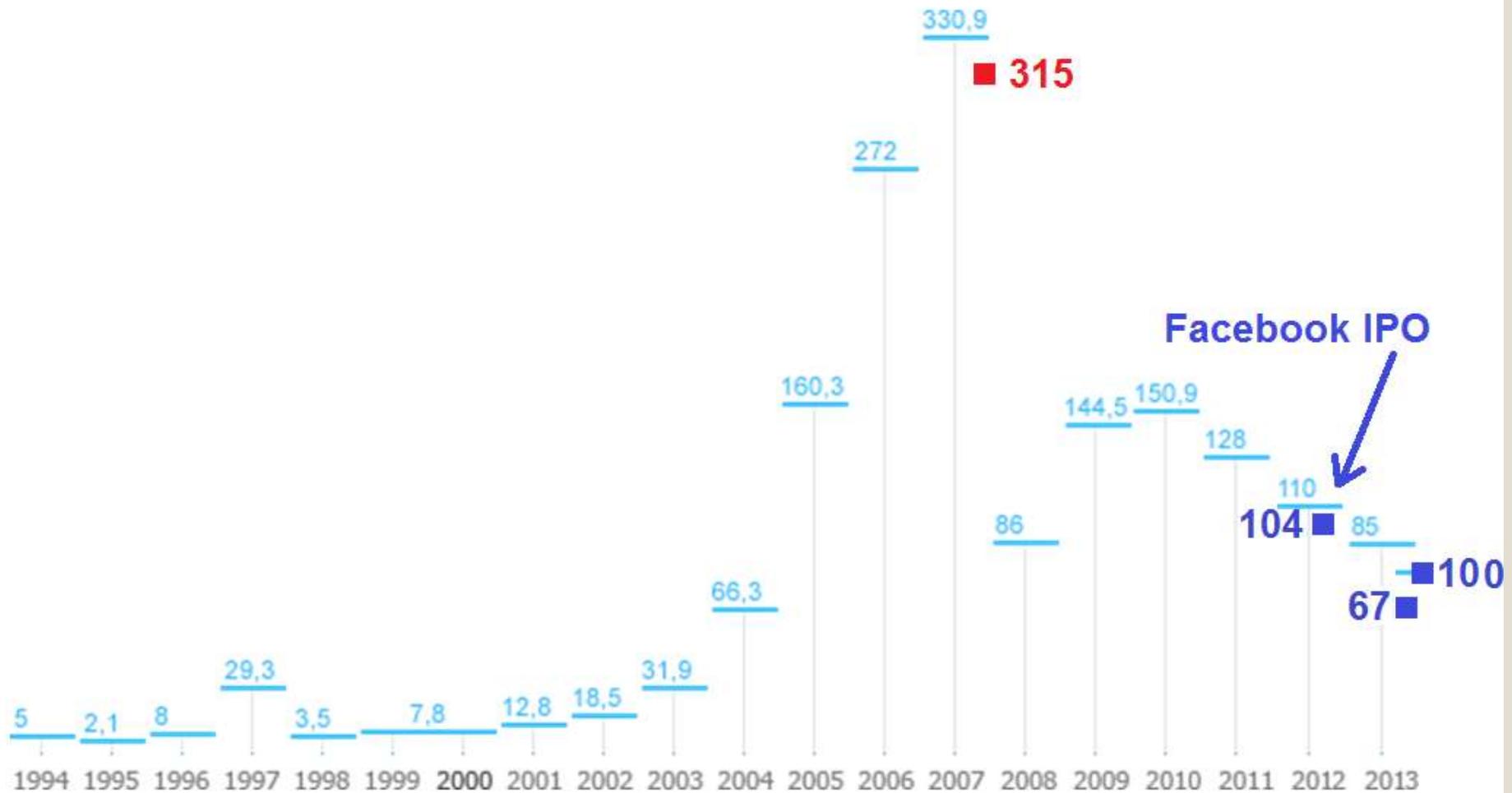
<http://investcafe.ru/companies/gazp>

Capitalization, \$B: GAZPROM (Russia), 2013.



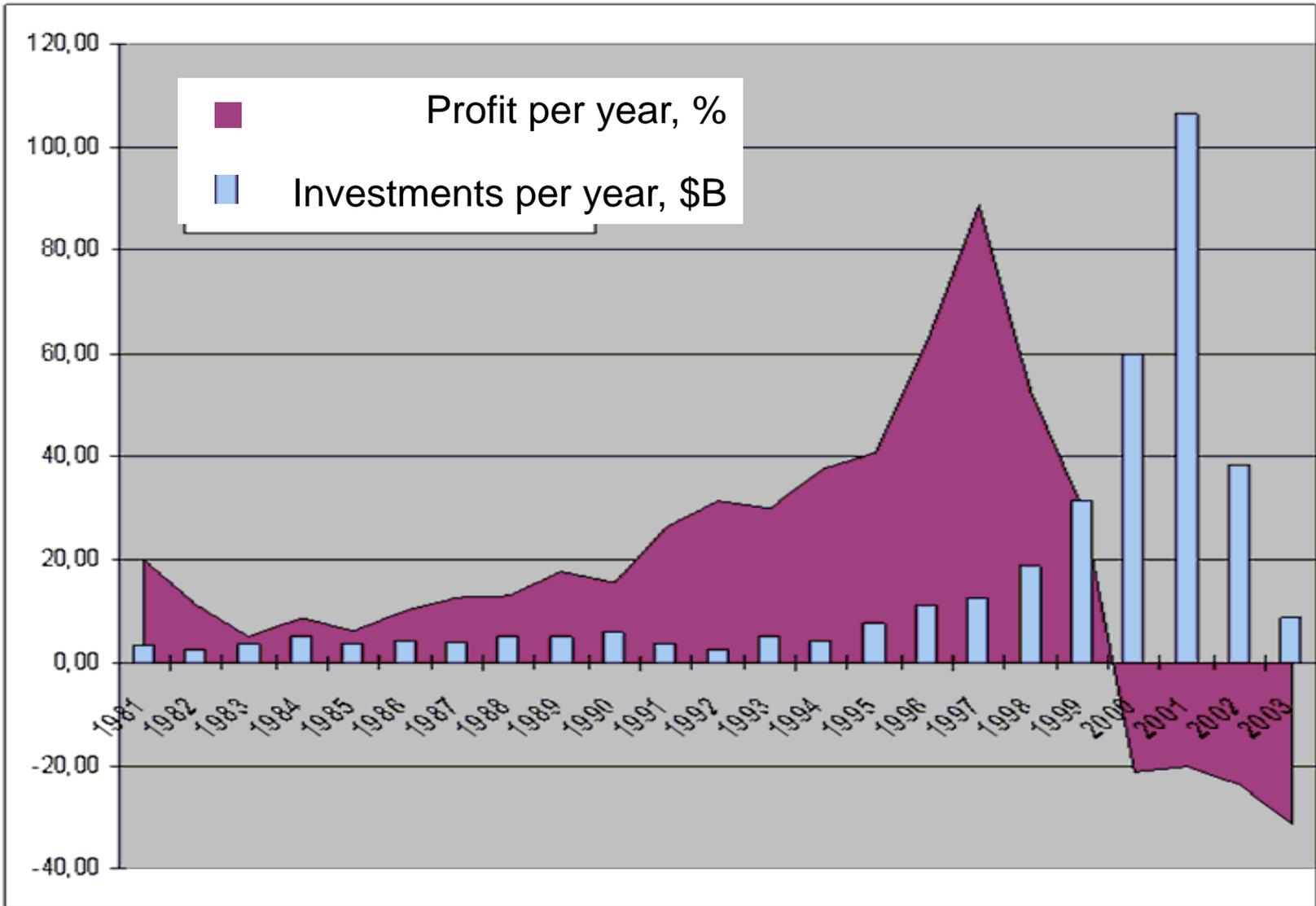
<http://investcafe.ru/companies/gazp>

Capitalization, \$B, 2013: GAZPROM & Facebook



<http://investcafe.ru/companies/gazp>, www.forbes.com

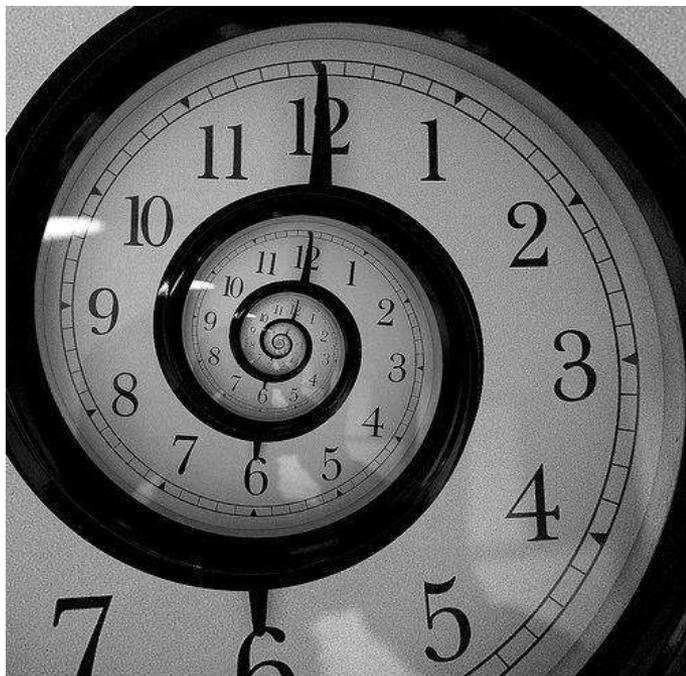
Venture Capital Generations, USA, 1981 - 2003



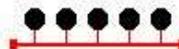
C. Campbell Venture Business: New Approach, 2004

Investment. Last freedom art (Robert Hegstrom, 2005):

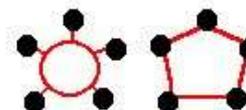
Intellectual model's set:



Общая шина



Кольцо



Полносвязная



Звезда



Иерархия



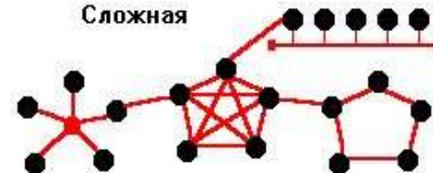
Звезда-Иерархия



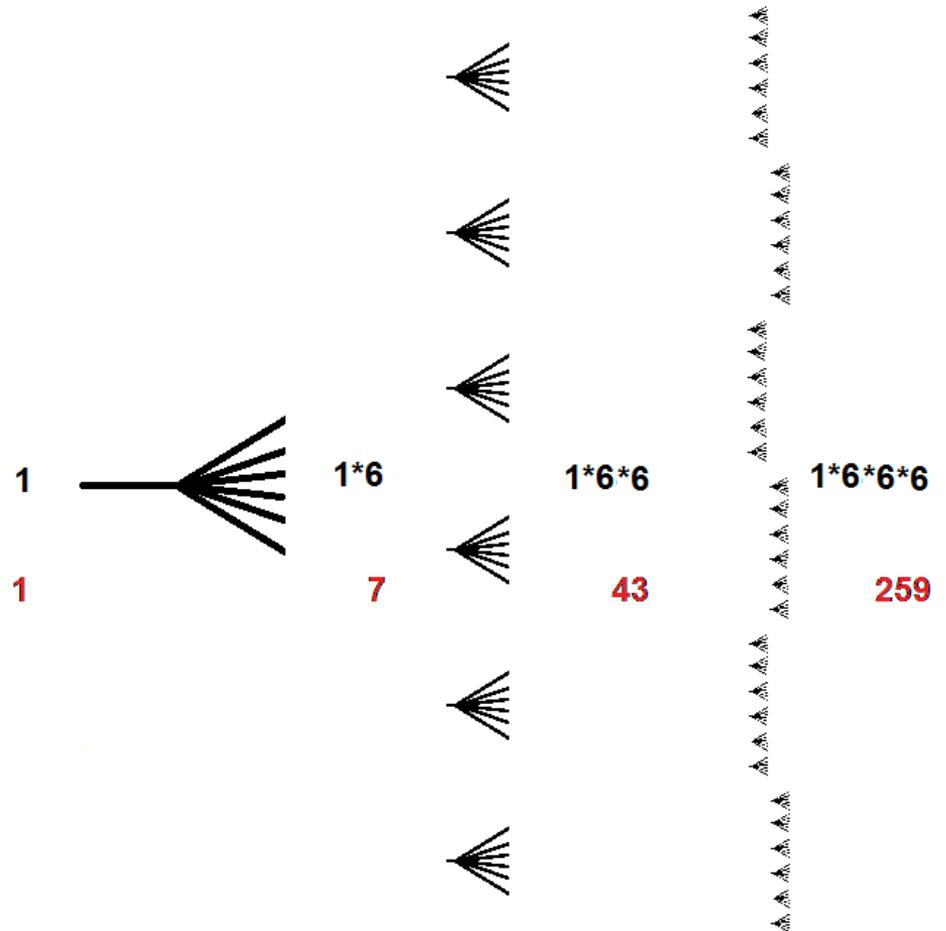
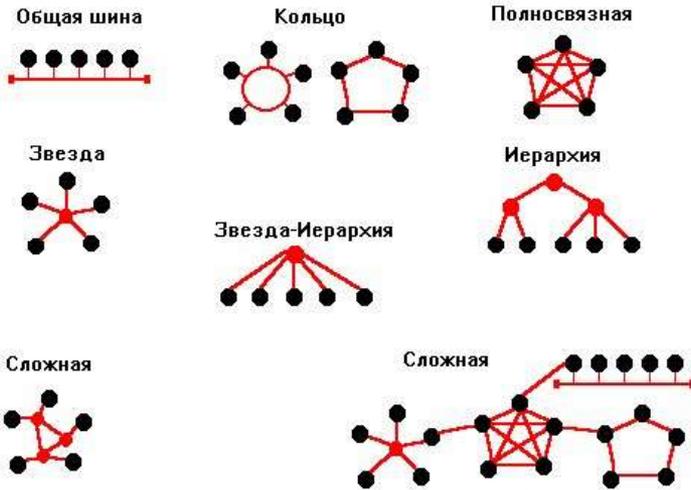
Сложная



Сложная



Investment. Last freedom art (Robert Hegstrom, 2005): Решетка интеллектуальных моделей



Слой	1	2	3	4	5	6	7	8	9
	1	7	43	259	1'555	9'331	55'987	335'923	2'015'539

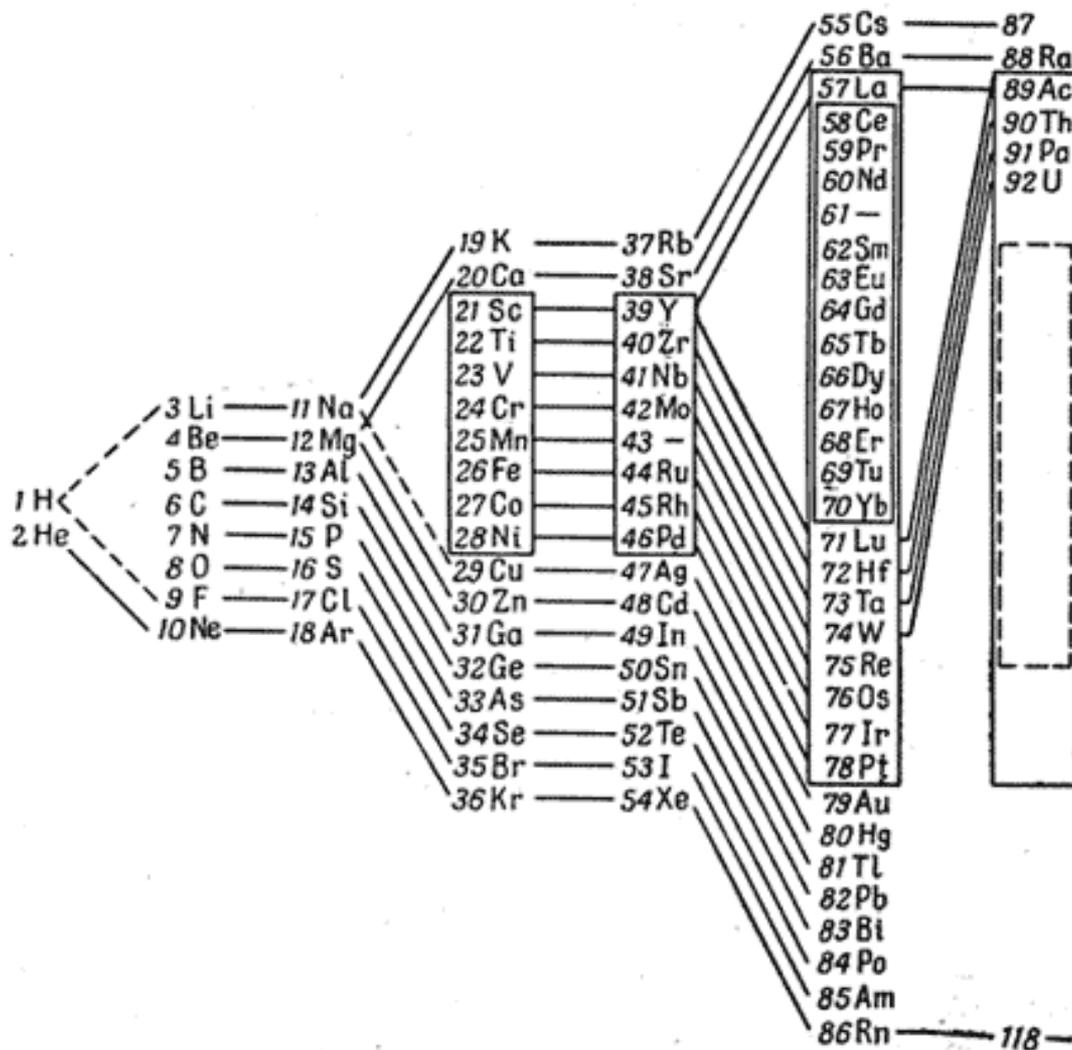
THE PERIODICITY OF THE ELEMENTS

The Elements	Their Properties in the Free State				The Composition of the Hydrogen and Organometallic Compounds BH ₃ or R(CH ₃) _n [5] n = 1	Symbols and Atomic Weights R A	The Composition of the Saline Oxides R ₂ O _n	The Properties of the Saline Oxides d' (2A + n'16) V	Small Periods or Series			
	t	a	d	A								
	[1]	[2]	[3]	[4]		[6]	[7]	[8]	[9]	[10]	[11]	
Hydrogen	< -200°	—	< 0.05	20	—	H 1	1 - n	0.017	19.0	< -20	1	
Lithium	180°	—	0.30	12	—	Li 7	1†	20	15	9	1	
Beryllium	(900°)	—	1.64	3.5	—	Be 9	— 2	3.06	16.1	+ 2.6	2	
Boron	(1500°)	—	2.5	4.4	—	B 11	— 3	1.8	30	16	—	
Carbon	> 2500°	—	< 3.0	5	4	C 12	— 4	> 1.0	< 88	< 19	—	
Nitrogen	— 203°	—	< 0.7	30	—	N 14	1 - 3* - 5*	1.64	66	< 3	—	
Oxygen	< -200°	—	< 1.0	16	—	O 16	—	—	—	—	—	
Fluorine	—	—	—	—	—	F 19	—	—	—	—	—	
Sodium	96°	0.71	0.98	23	—	Na 23	1†	Na ₂ O	2.6	24	-23	3
Magnesium	500°	0.27	1.74	14	—	Mg 24	— 2†	—	3.6	22	-3	—
Aluminium	600°	0.23	2.6	11	—	Al 27	— 3	Al ₂ O ₃	4.0	20	+ 1.9	—
Silicon	(1200°)	0.08	2.3	12	4	Si 28	— 3 4	2.65	45	5.2	—	
Phosphorus	44°	1.28	2.2	14	3	P 31	1 - 3* 4* 5*	2.30	50	6.2	—	
Sulphur	114°	0.07	2.07	15	—	S 32	— 2 - 4* 5* 6*	1.96	82	8.7	—	
Chlorine	-73°	—	1.8	27	—	Cl 35.5	1 - 3* - 5* - 7*	—	—	—	—	
Potassium	58°	0.84	0.87	45	—	K 39	1†	—	2.7	33	-55	4
Calcium	(800°)	—	1.0	25	—	Ca 40	— 2†	3.13	36	-7	—	
Scandium	—	—	(2.5)	(18)	—	Sc 44	— 3†	3.86	35	(0)	—	
Titanium	(2500°)	—	(5.1)	(9.4)	—	Ti 48	— 2 4	4.2	38	(+5)	—	
Vanadium	(2000°)	—	5.5	9.2	—	V 51	— 3 3 4 5	3.49	52	6.7	—	
Chromium	(2000°)	—	5.5	8.0	—	Cr 52	— 2 3 4 - 6*	2.74	73	9.5	—	
Manganese	(1500°)	—	7.5	7.2	—	Mn 55	— 2* 3 4 - 6* 7*	—	—	—	—	
Iron	1400°	0.12	7.8	7.2	—	Fe 56	— 2* 3 4 - 6*	—	—	—	—	
Cobalt	(1400°)	0.13	6.0	6.8	—	Co 58.5	— 2* 3 4 - 6*	—	—	—	—	
Nickel	1350°	0.17	8.7	6.8	—	Ni 59	— 2* 3 4 - 6*	—	—	—	—	
Copper	1064°	0.29	8.8	7.2	—	Cu 63	1† 2†	Cu ₂ O	5.9	24	9.8	5
Zinc	—	—	—	—	—	Zn 65	— 2†	—	—	—	—	
Gallium	30°	—	5.06	12	—	Ga 70	— 3	—	—	—	—	
Germanium	900°	—	5.47	13	4	Ge 72	— 2 - 4	Ge ₂ O ₃	(5.1)	(36)	(4.0)	—
Arsenic	500°	0.06	5.7	13	3	As 75	— 3 - 5*	4.7	44	4.5	—	
Selenium	317°	—	4.8	16	—	Se 79	— 4 - 6*	4.1	56	6.0	—	
Bromine	-7°	—	3.1	26	—	Br 80	1 - 3* - 5* - 7*	—	—	—	—	
Rubidium	39°	—	1.5	57	—	Rb 85	1†	—	—	—	—	
Strontium	(600°)	—	2.5	35	—	Sr 87	— 2†	4.8	48	-11	6	
Yttrium	—	—	(3.4)	(26)	—	Y 89	— 3†	5.03	45	(-2)	—	
Zirconium	(1500°)	—	4.1	22	—	Zr 90	— 3 4	5.7	43	-0.2	—	
Niobium	—	—	7.1	13	—	Nb 94	— 3 - 5*	4.7	57	+6.2	—	
Molybdenum	—	—	8.6	12	—	Mo 96	— 2 3 4 - 6*	4.4	63	6.6	—	
Ruthenium	(2000°)	0.10	12.2	8.4	—	Ru 105	— 2 3 4 - 6 - 8	—	—	—	—	
Rhodium	(1900°)	0.08	12.1	8.6	—	Rh 104	— 2 3 4 - 6	—	—	—	—	
Palladium	1500°	0.12	11.4	8.3	—	Pd 106	1† 2 - 4	—	—	—	—	
Silver	950°	0.19	10.5	10	—	Ag 108	1†	Ag ₂ O	7.5	31	11	7
Cadmium	320°	0.51	8.6	13	—	Cd 112	— 2†	6.15	31	2.5	—	
Indium	176°	0.46	7.4	14	—	In 113	— 2 3	In ₂ O ₃	7.18	38	2.7	—
Tin	226°	0.23	7.2	16	—	Sn 118	— 2 - 4 5	6.95	43	2.8	—	
Antimony	482°	0.12	6.7	18	4	Sb 120	— 3 4 5	6.5	49	2.6	8	
Tellurium	455°	0.17	6.4	20	—	Te 127	— 3 - 4 - 6*	5.1	68	4.7	—	
Iodine	114°	—	4.9	26	—	I 127	1 - 3 - 5* - 7*	—	—	—	—	
Cesium	27°	—	1.88	71	—	Cs 133	1†	—	—	—	—	
Barium	—	—	3.75	36	—	Ba 137	— 2†	3.1	60	-6.0	—	
Lanthanum	(500°)	—	6.7	23	—	La 138	— 3†	6.5	50	+1.3	—	
Cerium	(700°)	—	6.6	21	—	Ce 140	— 3 4	6.74	50	2.0	—	
Didymium	(800°)	—	6.5	22	—	Dy 142	— 3 - 5	—	—	—	—	
Ytterbium	—	—	(6.9)	(25)	—	Yb 173	— 3	9.18	43	(-2)	10	
Tantalum	—	—	10.4	18	—	Ta 182	— 3 - 5	7.5	29	4.6	—	
Tungsten	(1500°)	—	13.1	9.6	—	W 184	— 4 - 6	6.9	67	8	—	
Osmium	(2500°)	0.07	22.5	8.5	—	Os 191	— 3 4 - 6 - 8	—	—	—	—	
Iridium	2000°	0.07	22.4	8.6	—	Ir 193	— 3 4 - 6	—	—	—	—	
Platinum	1775°	0.05	21.5	9.2	—	Pt 196	— 2 - 4	—	—	—	—	
Gold	1045°	0.14	19.3	10	—	Au 198	1 - 3	Au ₂ O	(12.5)	(33)	(13)	11
Mercury	-59°	—	13.6	15	—	Hg 200	1† 2†	11.1	39	4.5	—	
Thallium	284°	0.61	11.9	17	—	Tl 204	1† - 3	Tl ₂ O ₃	(9.7)	(47)	(4.0)	—
Lead	326°	0.29	11.3	18	4	Pb 208	— 2† - 4	8.9	52	4.2	—	
Bismuth	264°	0.14	9.8	21	—	Bi 208	— 3 - 5	—	—	—	—	
Thorium	—	—	11.1	21	—	Th 232	— 4	9.86	51	2.0	12	
Uranium	(800°)	—	18.7	13	—	U 240	— 4 - 6	(7.2)	(80)	(9)	—	



Д.И.Менделеев
(1834–1907)

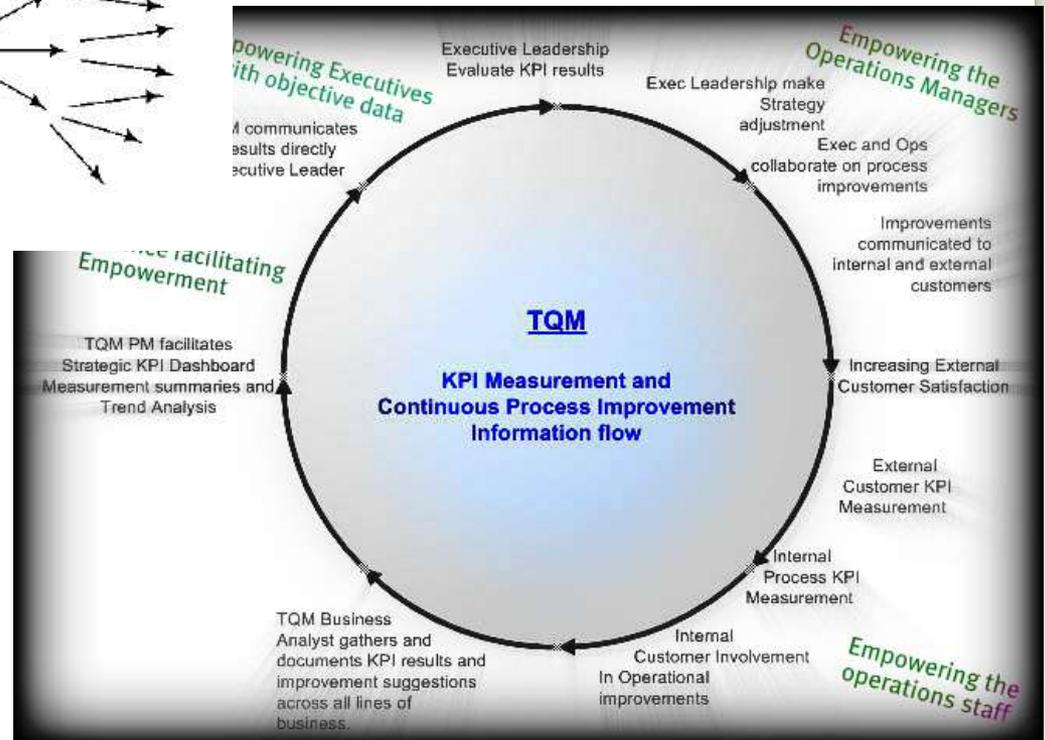
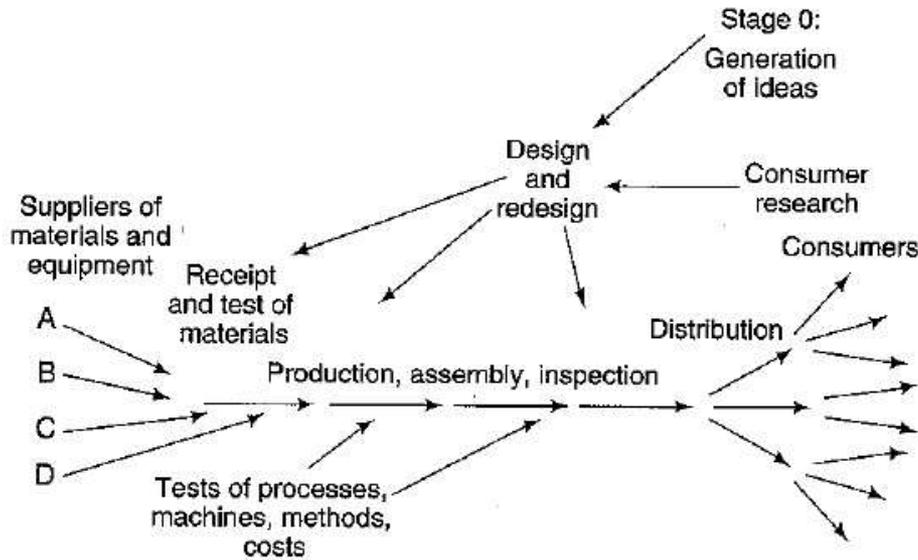
Периодическая
система химических
элементов (1869)



Нильс Бор
(1885-1962)

Периодическая
система химических
элементов (1921)

Total Quality Management (TQM, Edwards Deming):



Color classificatory:

Green



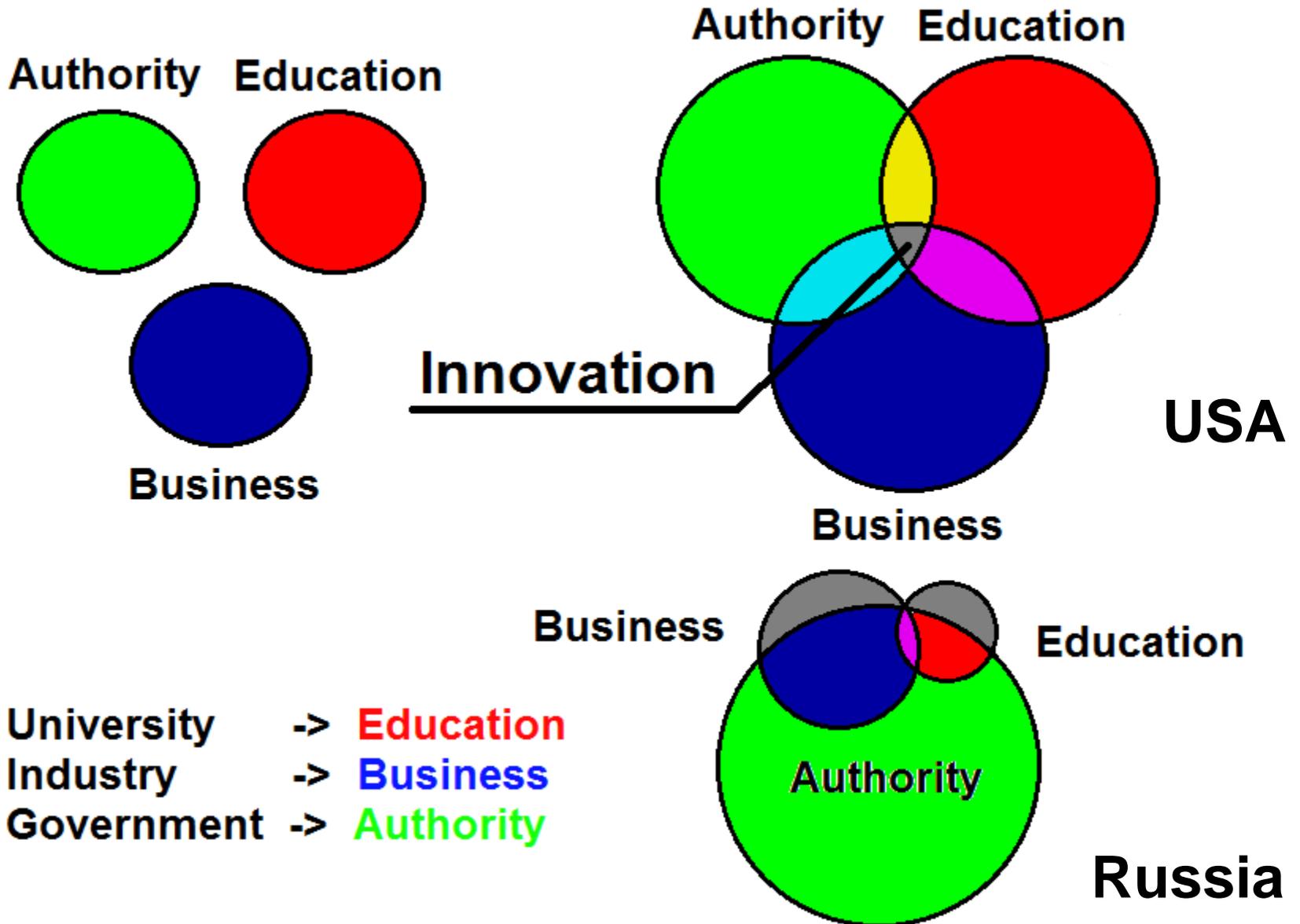
Red



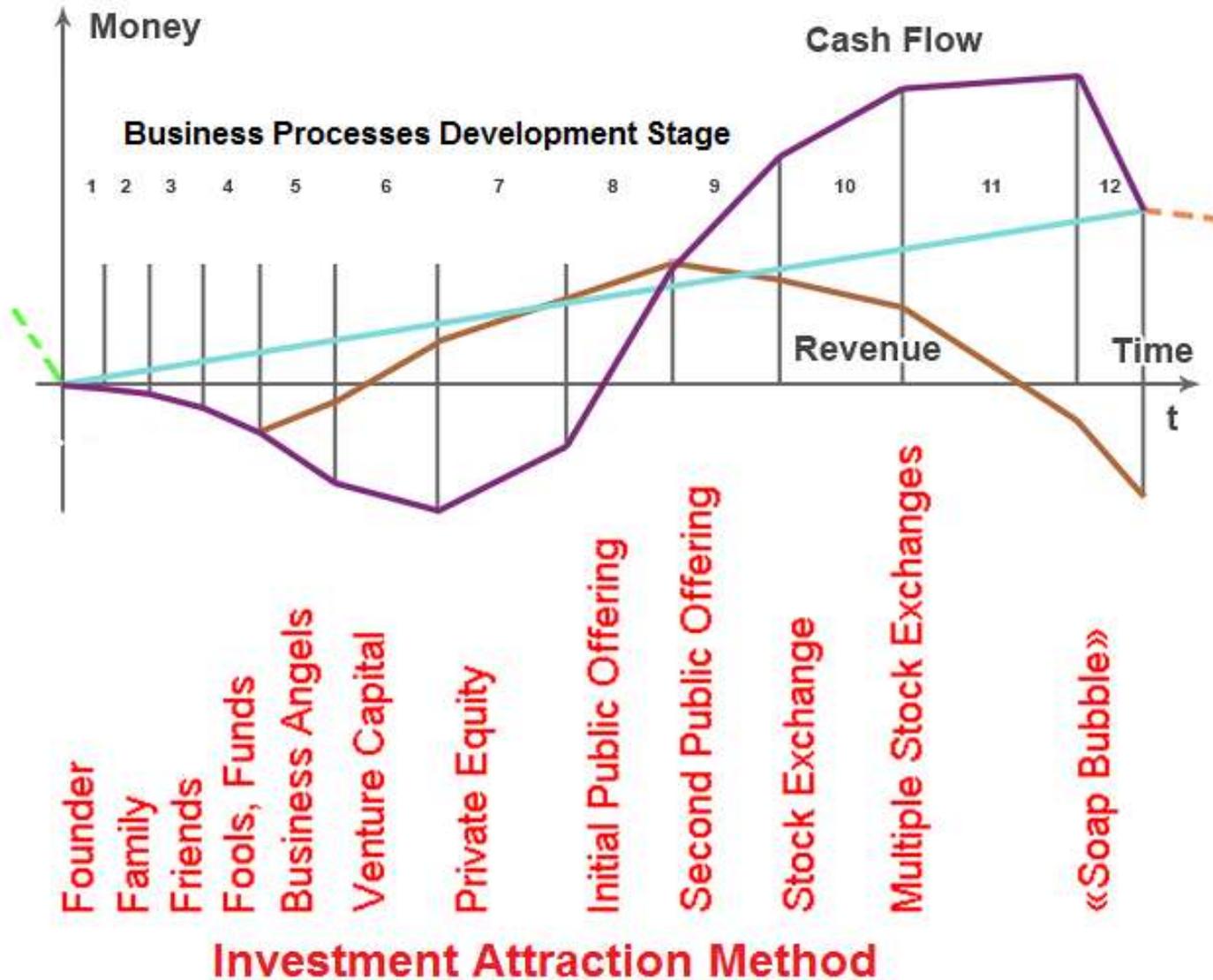
Blue



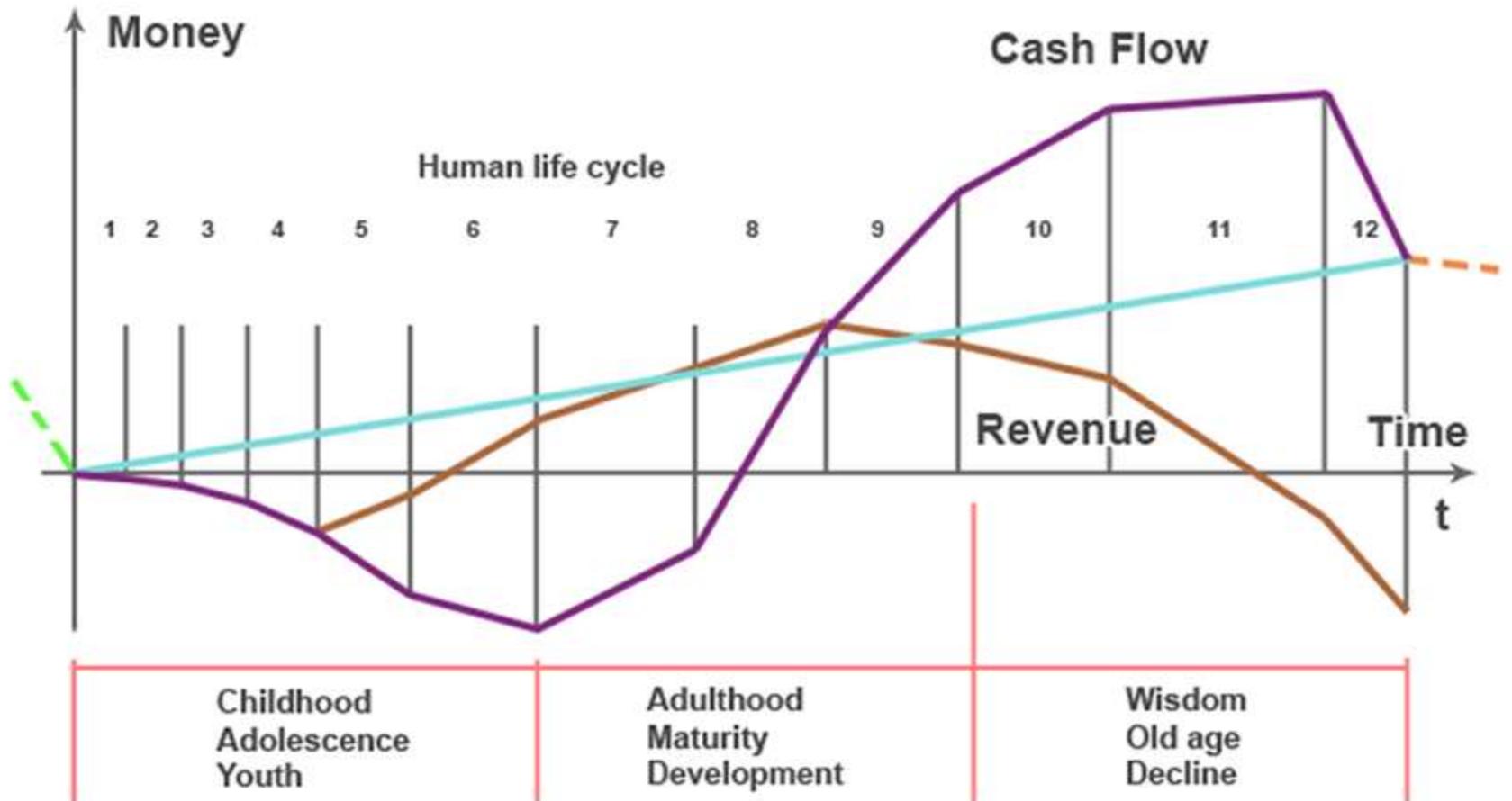
Triple Helix Innovation (Henry Etzkowitz, 2000):



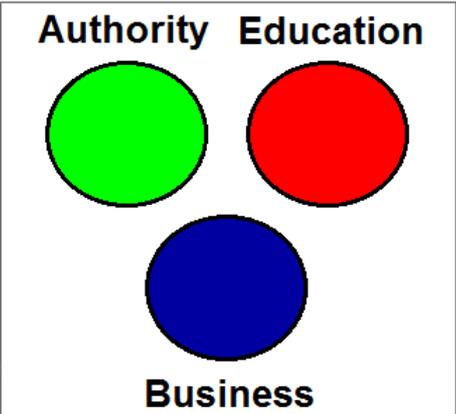
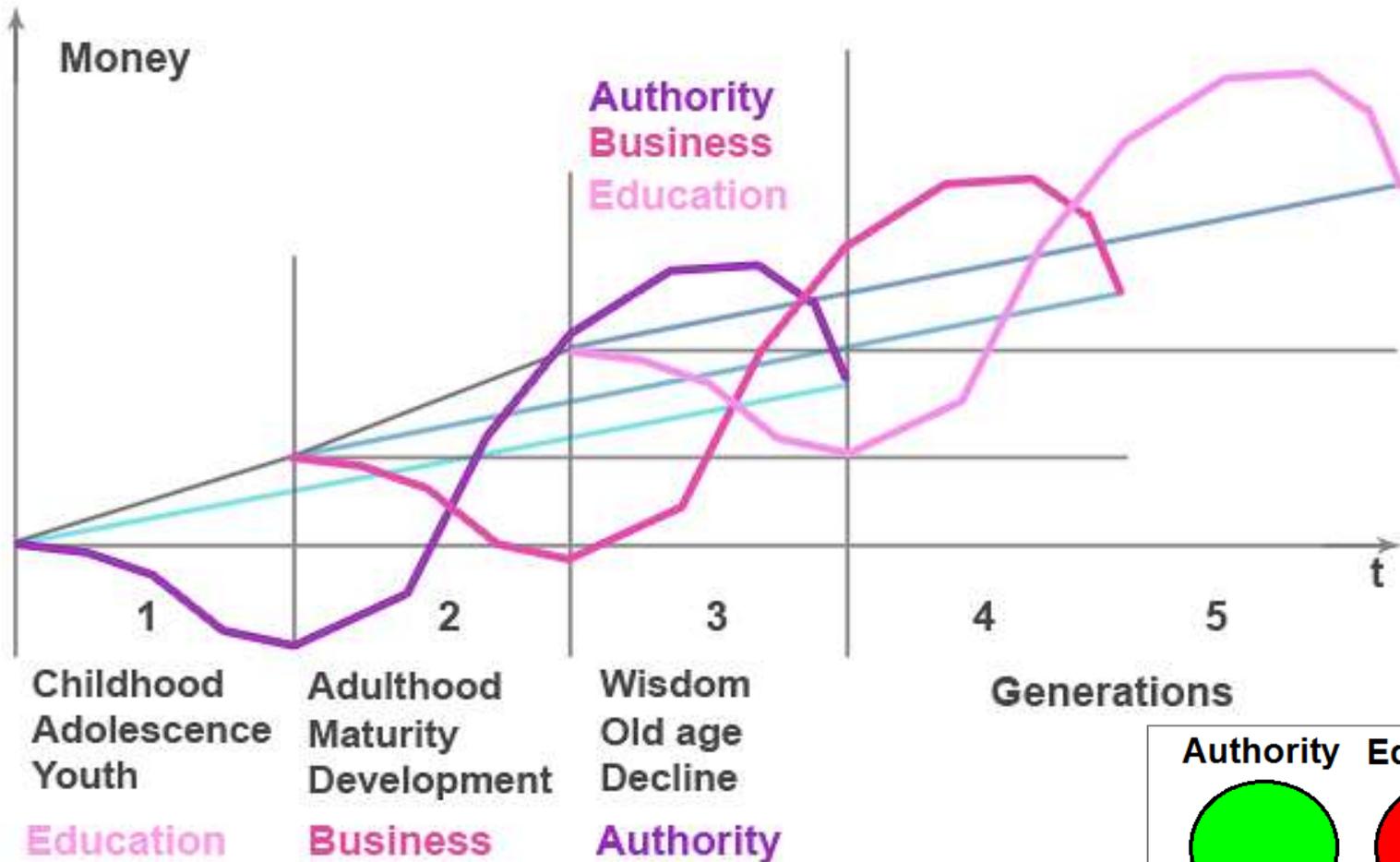
Life Cycle of Innovation company and Fundraising:



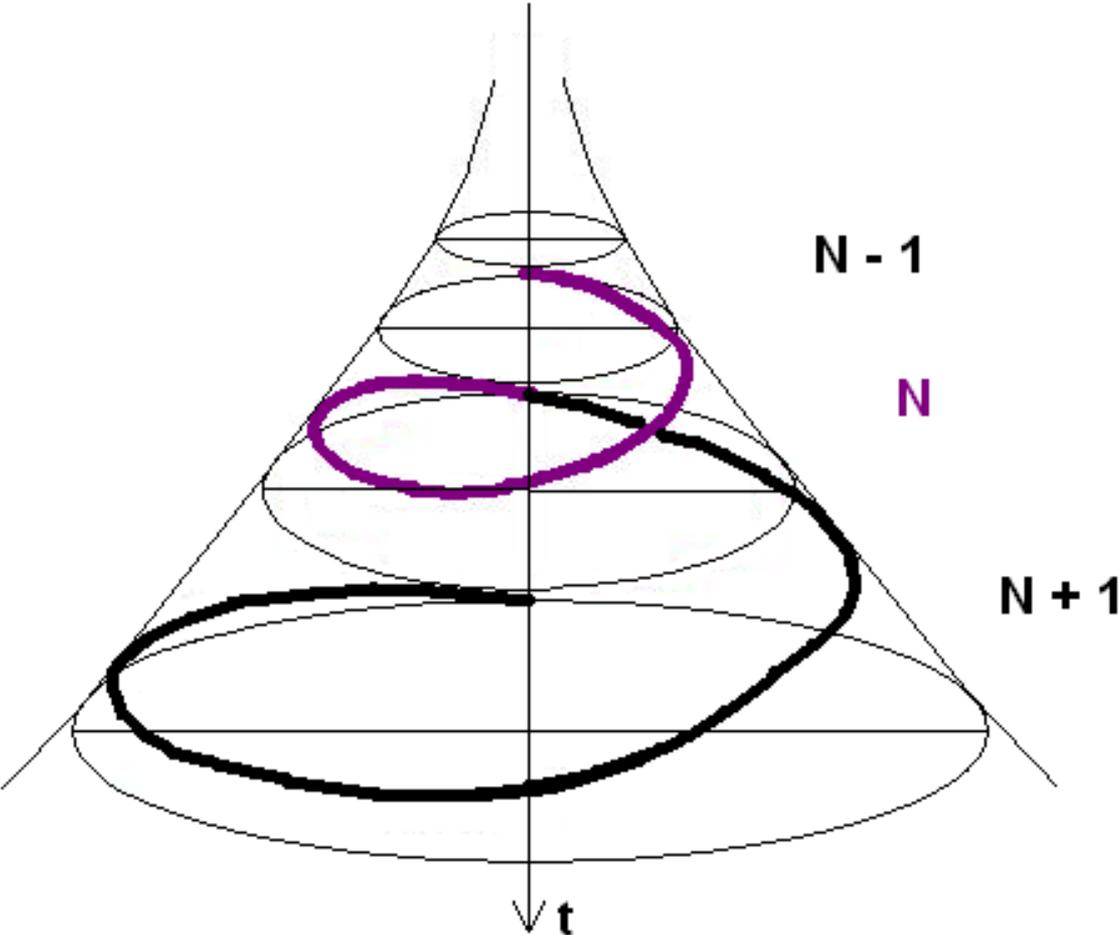
Human Life Cycle:



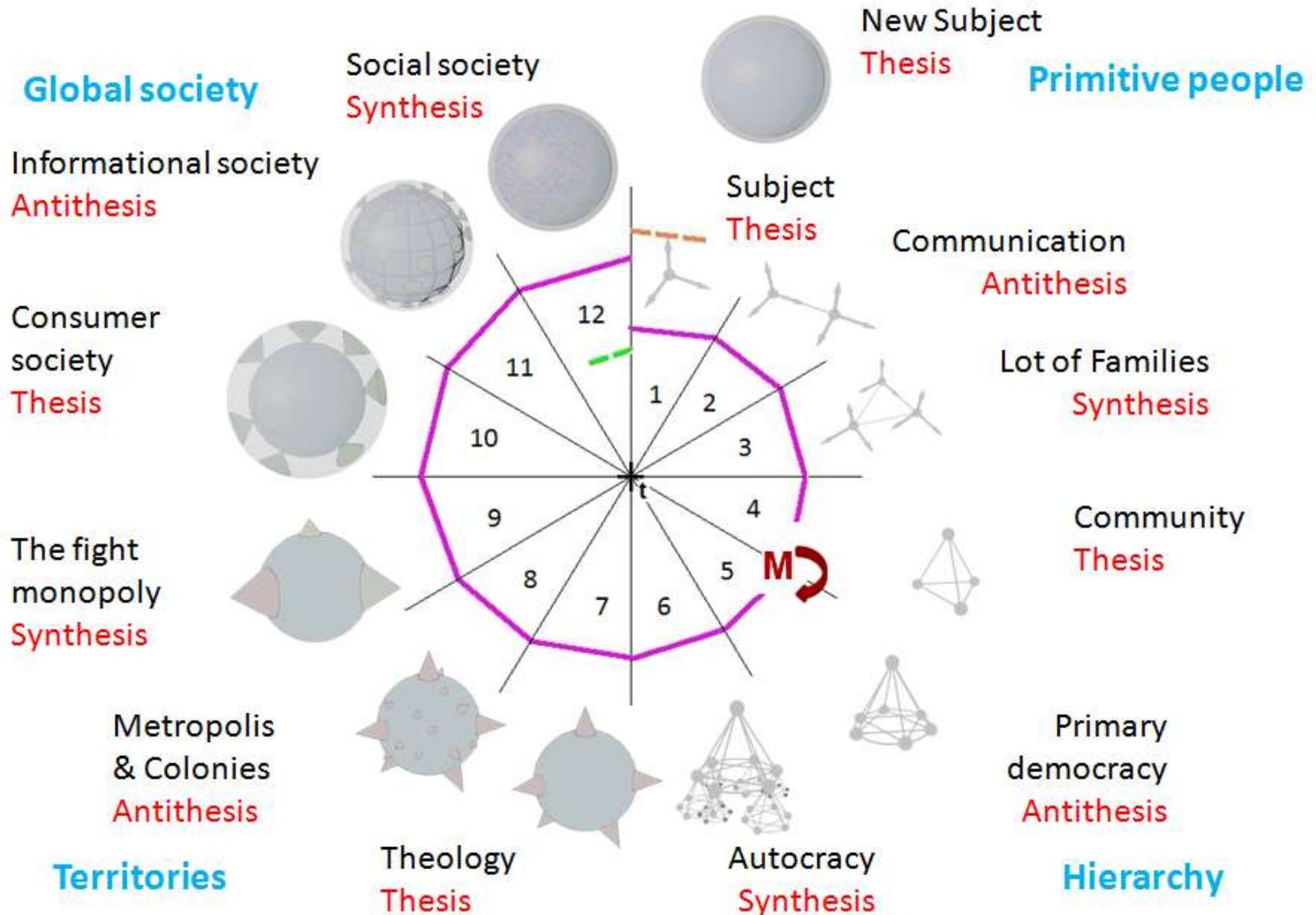
Household Life Cycle:



Chinese model of Time, Businesses, Humanity:



Innovation Snail of a Humanity:



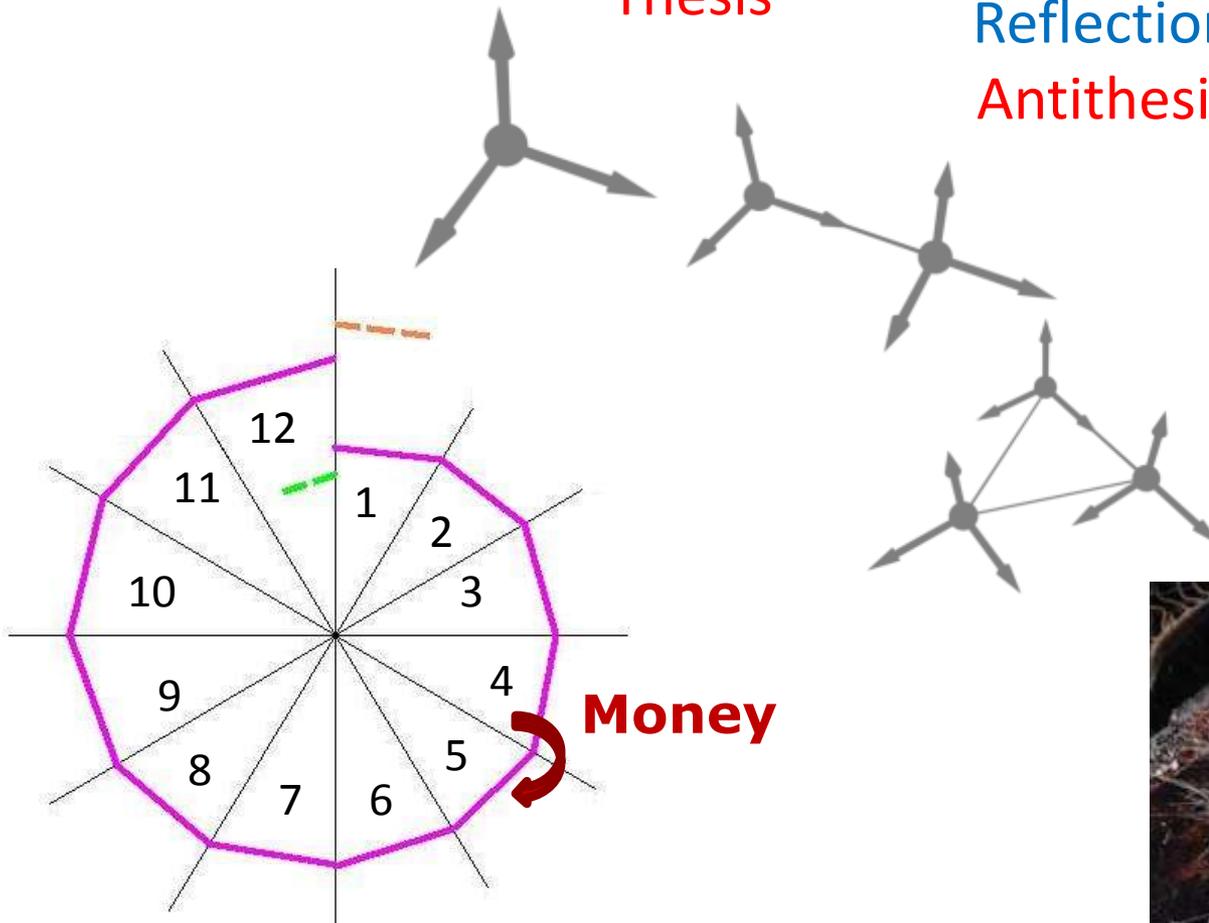
Life systems Topology - 1:

Point
Idea
Thesis

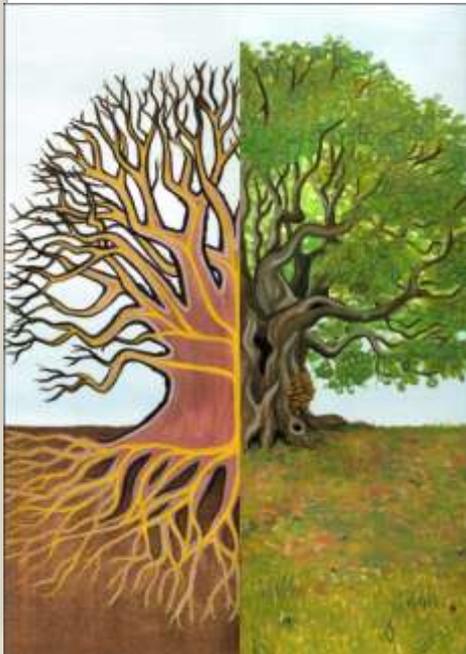
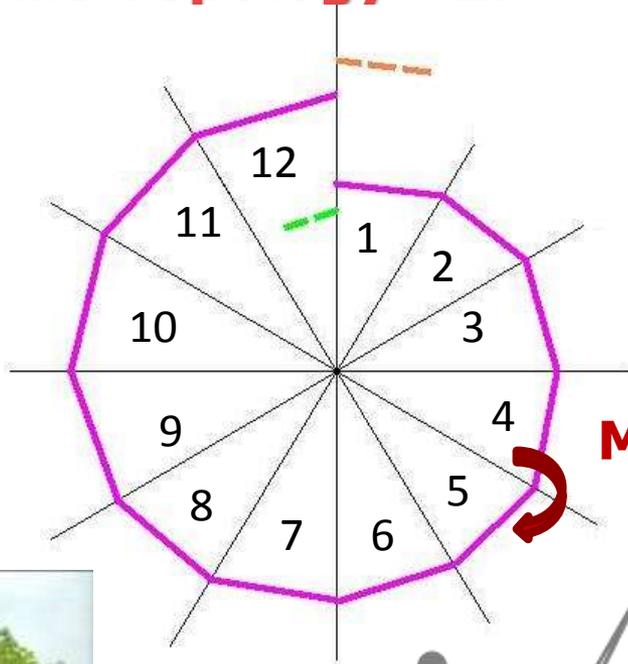
Primitives

Line
Reflection
Antithesis

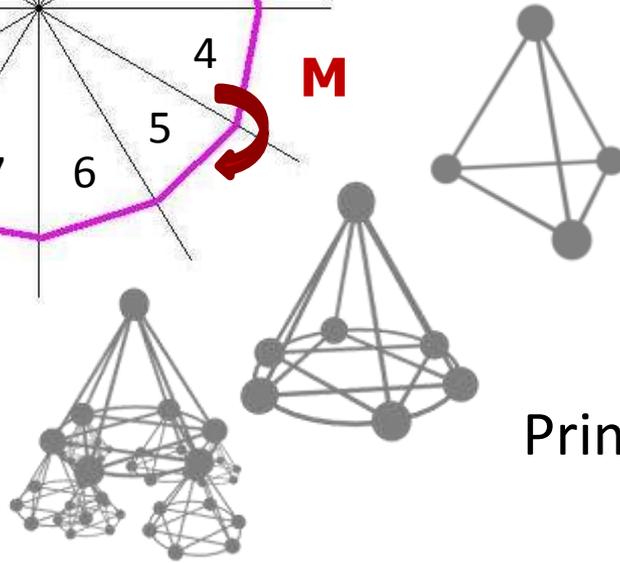
Surface
Links
Synthesis



Life systems Topology - 2:



Conic
 Pyramid of Power
 Synthesis



Primary Conic
 Start-up
 Antithesis

Primary Volume
 Community
 Thesis

Hierarchy

Life systems Topology - 3:



The fight Monopoly

Dualism

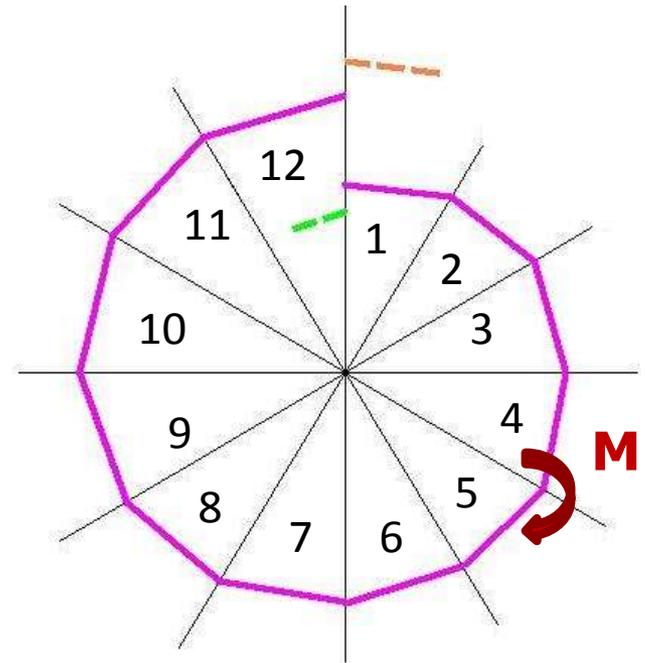
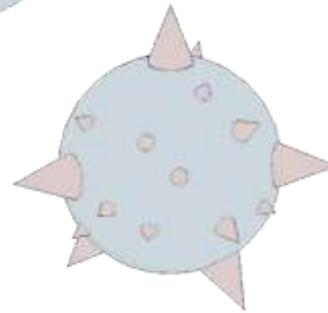
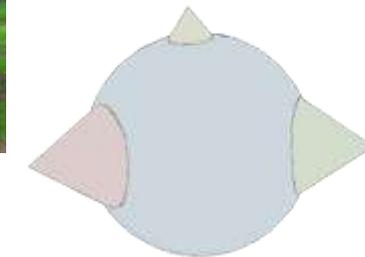
Synthesis

Metropolis & Colonies

Branches

Antithesis

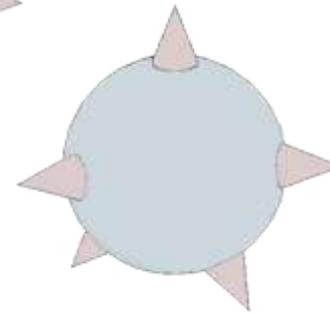
Territories



Regional connection

Expansion

Thesis



Life systems Topology - 4:

Society

Social Society
Social Networking
Synthesis



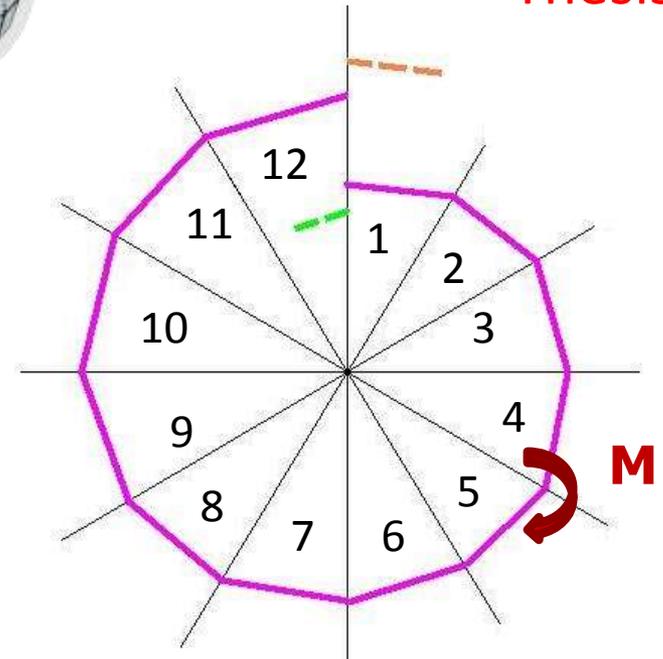
Informational Society
Units and Nets
Antithesis



Super-Point
Super-Idea
Thesis



Past-Industrial Society
Pyramid of Value
Thesis





Authority

Education

Global society

Primitive people

Informational society
Antithesis

Social society
Synthesis

New Subject
Thesis

Consumer society
Thesis

Subject
Thesis

Communication
Antithesis

The fight monopoly
Synthesis

Lot of Families
Synthesis

Community
Thesis

Metropolis & Colonies
Antithesis

Primary democracy
Antithesis

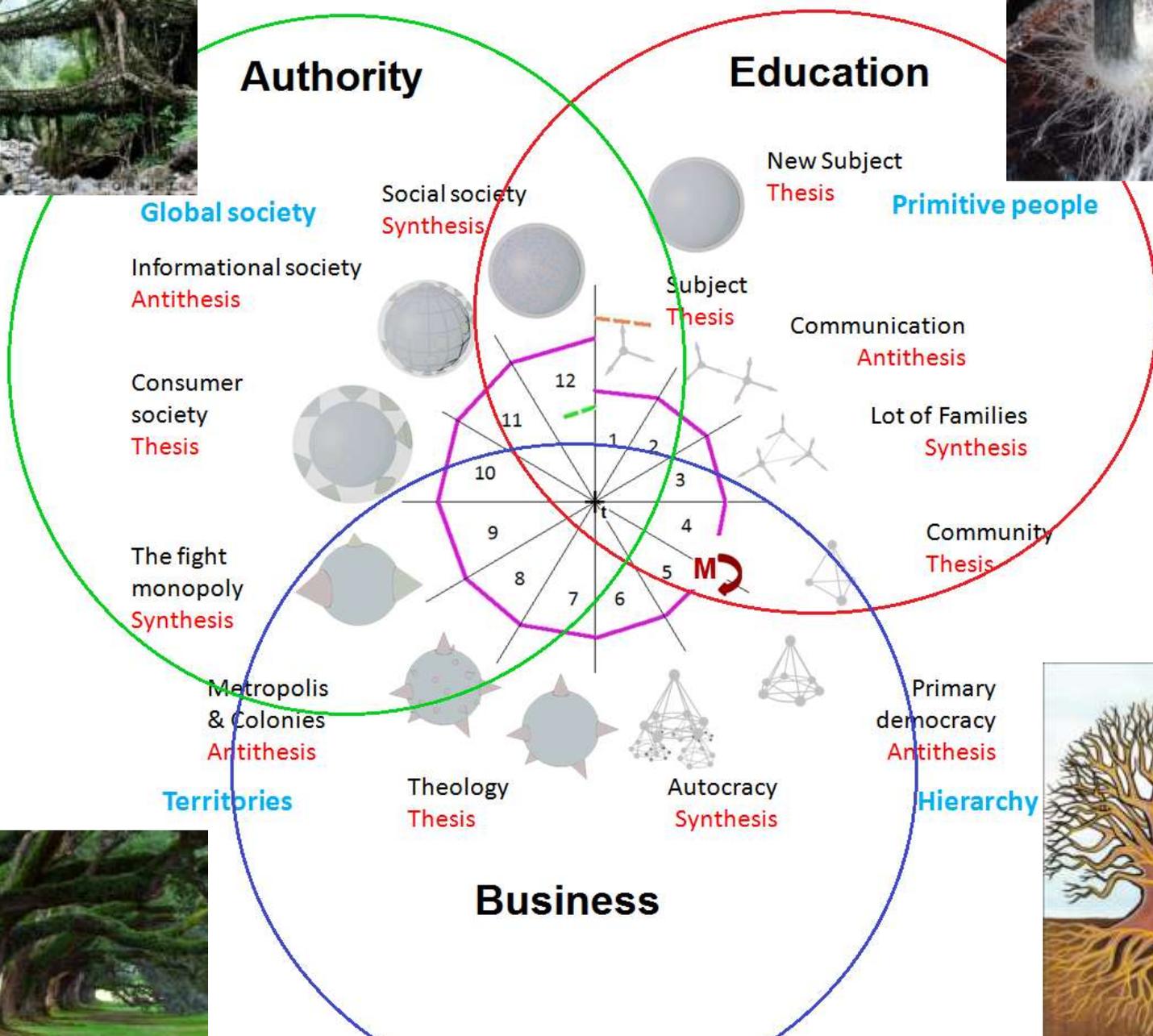
Territories

Theology
Thesis

Autocracy
Synthesis

Hierarchy

Business



Innovation Snail of a typical Business:

