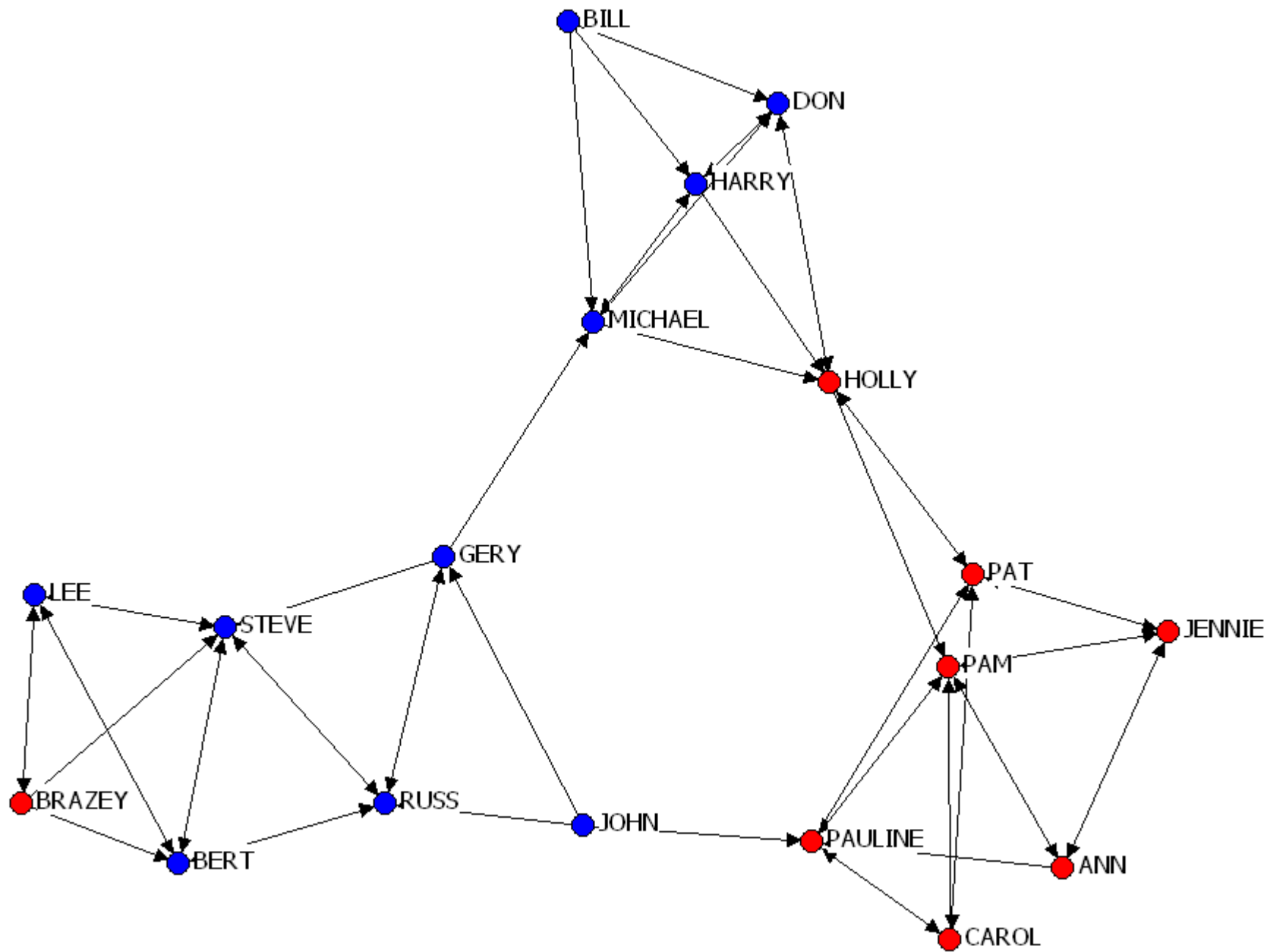


E-I index e brokerage roles

# E-I index

- Network data plus a partition
- E= external links
- I= internal links
- Index =  $(E-I)/(E+I)$
- Reports made at network, group and individual level.
- This value can range from 1 (eterophily) to -1 (homophily)



Density matrix

	1	2
1	0.429	0.087
2	0.087	0.356

70 ties.

Whole Network Results

	1	2	3	4
	Freq	Pct	Possibl	Density
1 Internal	56.000	0.800	146.000	0.384
2 External	14.000	0.200	160.000	0.087
3 E-I	-42.000	-0.600	14.000	0.046

Max possible external ties: 160.000

Max possible internal ties: 146.000

E-I Index: -0.600

Group level E-I Index

		1	2	3	4
		Intern	Extern	Total	E-I
		-----	-----	-----	-----
1	1	24.000	7.000	31.000	-0.548
2	2	32.000	7.000	39.000	-0.641

Individual Level E-I Index

		1	2	3	4
		Intern	Extern	Total	E-I
		-----	-----	-----	-----
1	HOLLY	2.000	3.000	5.000	0.200
2	BRAZEY	0.000	3.000	3.000	1.000
3	CAROL	3.000	0.000	3.000	-1.000
4	PAM	5.000	0.000	5.000	-1.000
5	PAT	4.000	0.000	4.000	-1.000
6	JENNIE	3.000	0.000	3.000	-1.000
7	PAULINE	4.000	1.000	5.000	-0.600
8	ANN	3.000	0.000	3.000	-1.000
9	MICHAEL	4.000	1.000	5.000	-0.600
10	BILL	3.000	0.000	3.000	-1.000
11	LEE	2.000	1.000	3.000	-0.333
12	DON	3.000	1.000	4.000	-0.500
13	JOHN	2.000	1.000	3.000	-0.333
14	HARRY	3.000	1.000	4.000	-0.500
15	GERY	4.000	0.000	4.000	-1.000
16	STEVE	4.000	1.000	5.000	-0.600
17	BERT	3.000	1.000	4.000	-0.500
18	RUSS	4.000	0.000	4.000	-1.000

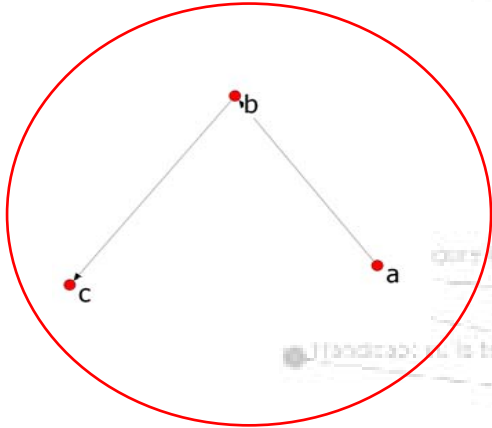
## Brokerage roles:

«any brokered exchange can be thought of as a *relation* involving three actors, two of whom are the actual parties to the transaction and one of whom is the intermediary or broker» [\[1\]](#)»

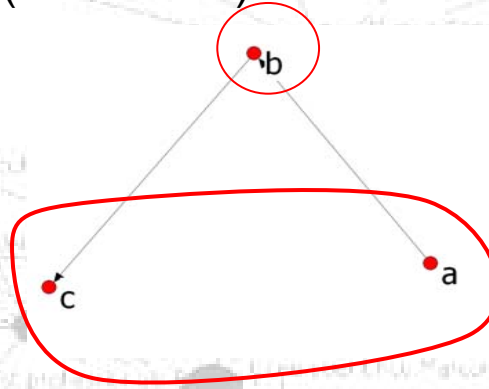
[\[1\]](#) Cfr. J. Gould, J. Fernandez, *Structures of mediation: A formal approach to brokerage in transaction networks*, in «Sociological Methodology» (19), 1989, p. 91.

# Gould and Fernandez five types of brokerage roles:

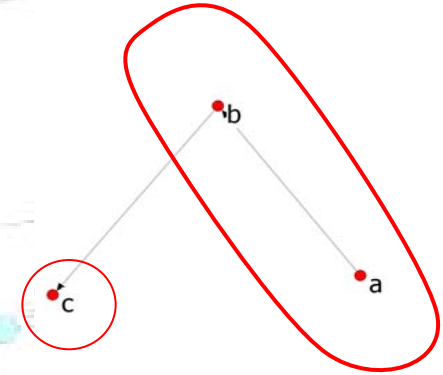
## 1. COORDINATOR



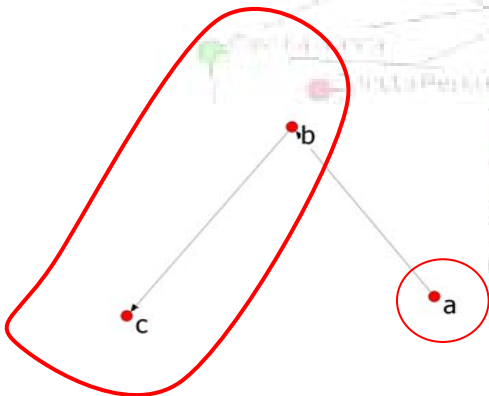
## 2. ITINERANT BROKER (consultant)



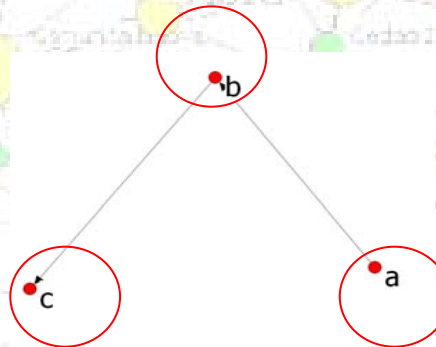
## 3. GATEKEEPER



## 4. REPRESENTATIVE



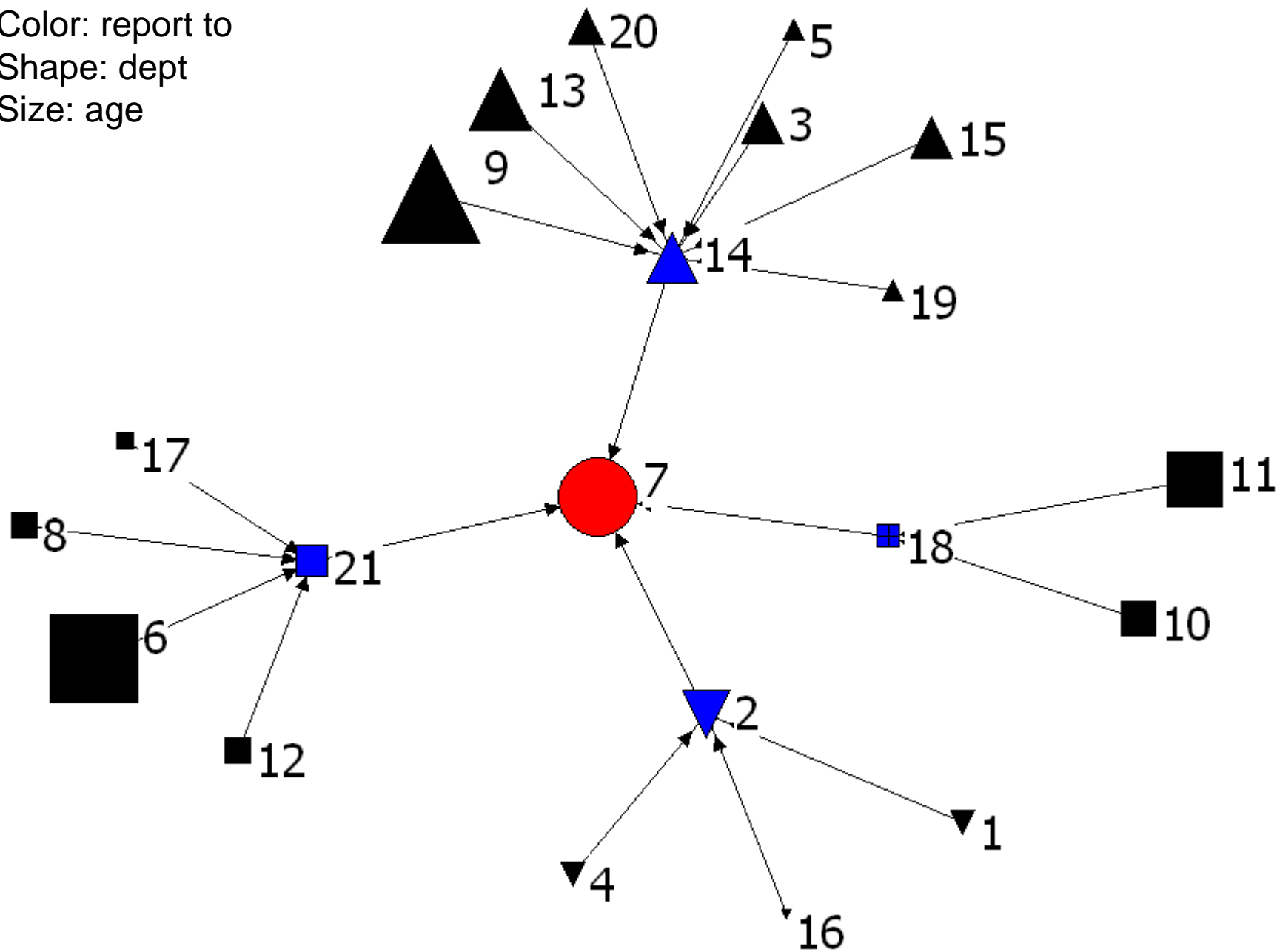
## 5. LIASON



These are data collected from the managers of a high-tec company.

The company manufactured high-tech equipment on the west coast of the United States and had just over 100 employees with 21 managers. Each manager was asked to whom do you go to for advice and who is your friend, to whom do you report was taken from company documents. In addition attribute information was collected. This consisted of the managers age (in years), length of service or tenure (in years), level in the corporate hierarchy (coded 1,2 and 3; 1=CEO, 2 = Vice President, 3 = manager) and department (coded 1,2,3,4 with the CEO in department 0 ie not in a department).

Color: report to  
Shape: dept  
Size: age

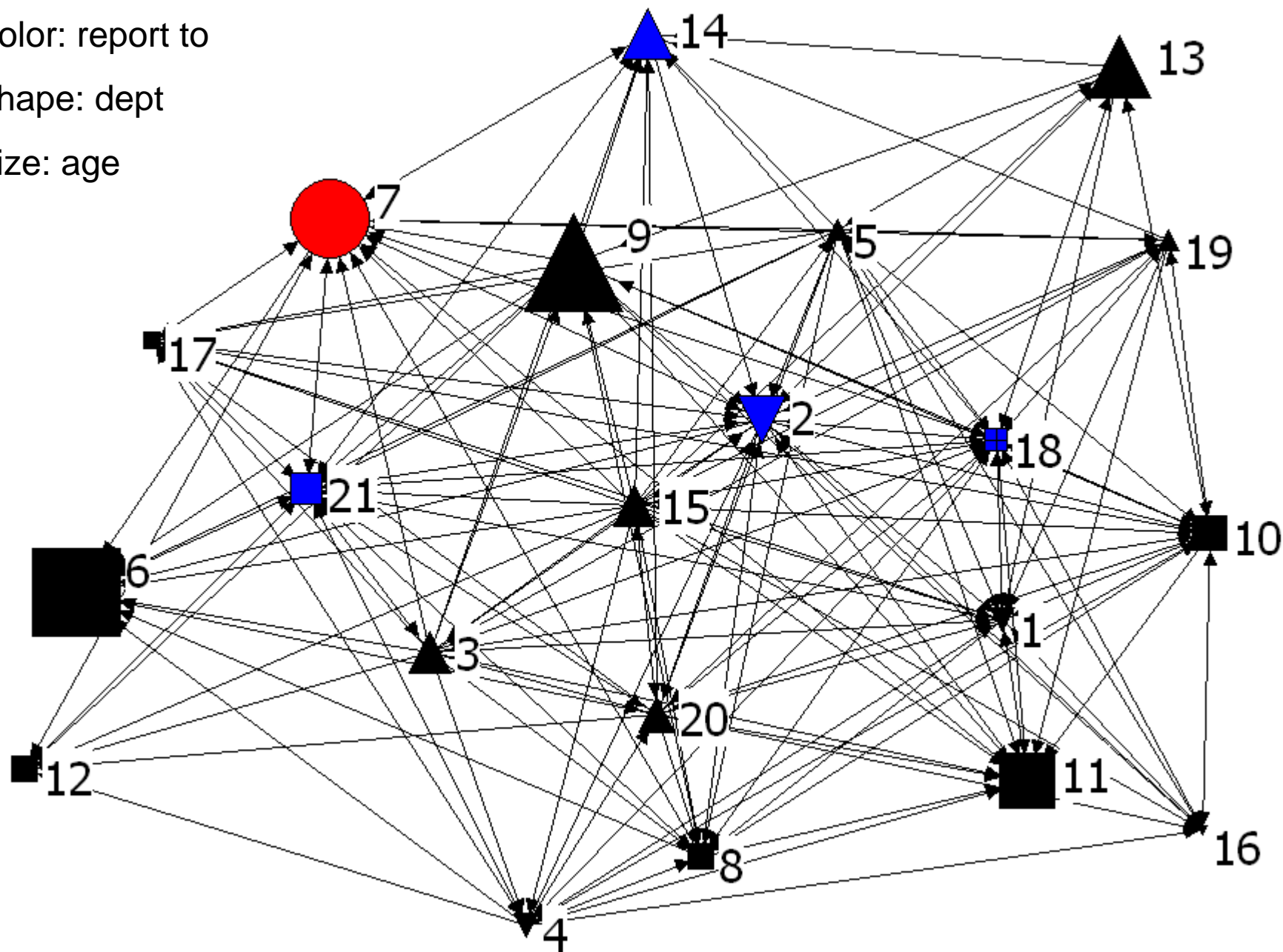


Advice

Color: report to

Shape: dept

Size: age



# Un-normalized Brokerage Scores

	1	2	3	4	5	6
	Coordinat	Gatekeepe	Represent	Consultan	Liaison	Total
7	0	0	0	2	36	38
21	1	12	4	0	7	24
8	1	19	9	0	17	46
6	0	17	29	0	34	80
12	1	7	7	3	9	27
17	0	17	28	10	25	80
5	0	0	6	1	8	15
14	3	12	23	2	24	64
9	0	0	0	1	8	9
3	0	0	7	1	9	17
13	0	0	2	2	9	13
20	3	19	19	2	24	67
15	0	5	4	1	12	22
19	3	0	3	2	9	17
11	0	0	3	10	32	45
18	1	13	7	10	87	118
10	0	1	0	10	20	31
2	0	15	10	1	34	60
4	0	2	9	1	5	17
16	0	13	6	2	13	34
1	0	13	1	0	12	26

## Node 7 (group 0)

	0	1	2	3	4
	--	--	--	--	--
0	0	0	0	0	0
1	0	1	14	4	3
2	0	0	0	0	0
3	0	5	0	1	0
4	0	0	8	2	0

Coordinator

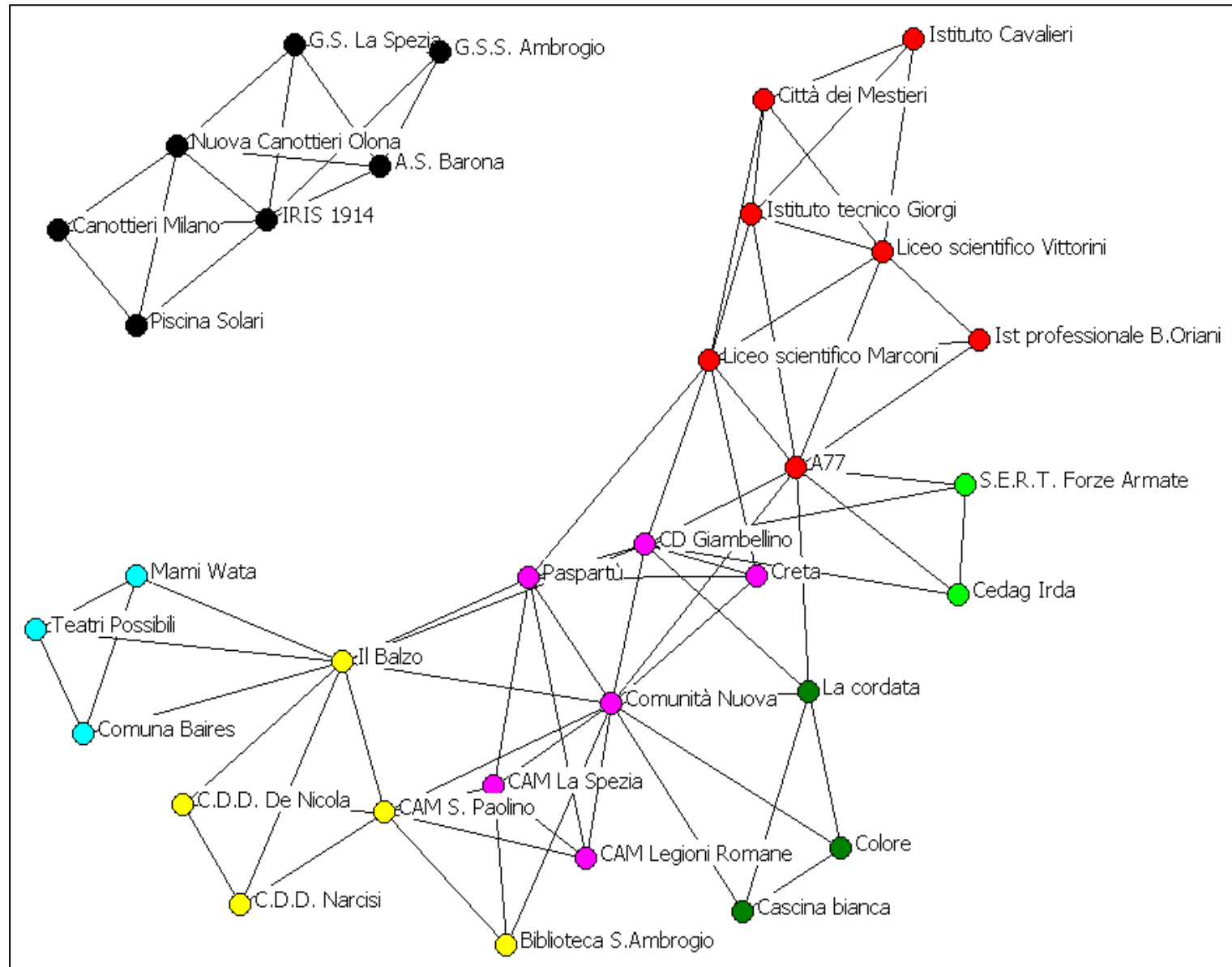
Consultant

Representative

Gatekeeping

Liaison

# Actor by actor co-membership matrix



Brokerage on the whole knowledge network

		1	2	3	4	5	6
		Coordinat	Gatekeepe	Represent	Consultan	Liaison	Total
-----							
3	A.S. Barona	1	39	1	6	5	52
28	Canottieri Milano	0	44	6	39	7	96
52	G.S. La Spezia	1	24	10	28	8	71
77	Nuova Canottieri Olona	2	70	51	77	152	352
57	IRIS 1914	4	23	3	3	3	36
53	G.S.S. Ambrogio	0	32	44	67	94	237
-----							
65	La cordata	0	24	41	131	210	406
40	Colore	0	11	31	55	110	207
29	Cascina bianca	0	11	32	72	110	225
-----							
30	CD Giambellino	1	32	83	192	269	577
43	Comunità Nuova	5	158	88	263	521	1035
46	Creta	2	14	14	13	32	75
26	CAM Legioni Romane	1	16	3	1	18	39
25	CAM La Spezia	0	23	1	3	13	40
80	Paspartù	5	19	136	84	175	419
-----							
58	Ist professionale B.Oriani	3	25	20	20	24	92
59	Istituto Cavalieri	2	84	9	19	34	148
71	Liceo scientifico Vittorini	5	77	41	105	42	270
1	A77	3	98	56	117	123	397
62	Istituto tecnico Giorgi	3	67	73	186	119	448
70	Liceo scientifico Marconi	4	69	76	144	156	449
38	Città dei Mestieri	1	9	35	5	19	69
-----							
86	S.E.R.T. Forze Armate	0	17	10	114	161	302
31	Cedag Irda	0	6	23	62	236	327
-----							
27	CAM S. Paolino	3	33	46	74	111	267
55	Il Balzo	0	77	78	223	394	772
17	C.D.D. Narcisi	0	22	6	26	68	122
16	C.D.D. De Nicola	0	40	8	43	94	185
15	Biblioteca S.Ambrogio	0	11	36	92	77	216
-----							
41	Comuna Baires	0	26	43	167	239	475
95	Teatri Possibili	0	10	3	2	34	49
72	Mami Wata	0	0	40	21	19	80
-----							

## Comunità Nuova (group 3)

**coordinator** **gatekeeper** **representative** **consultant** **liason** **tot**  
**5** **158** **88** **263** **521** **1035**

Node Comunità Nuova (group 3)								
	0	1	2	3	4	5	6	7
0	262	48	70	117	84	26	61	21
1	9	0	3	4	3	1	3	1
2	21	5	0	12	6	2	5	2
3	46	10	12	5	10	0	7	3
4	15	3	5	9	0	1	6	2
5	8	2	2	1	3	0	3	1
6	47	1	15	10	16	2	1	4
7	8	1	2	5	1	1	1	0

**Coordinator**

**Consultant**

**Representative (sum of all the values is 88)**

**Gatekeeper (sum of all values is 158)**

**Liason (sum of all values is 521)**