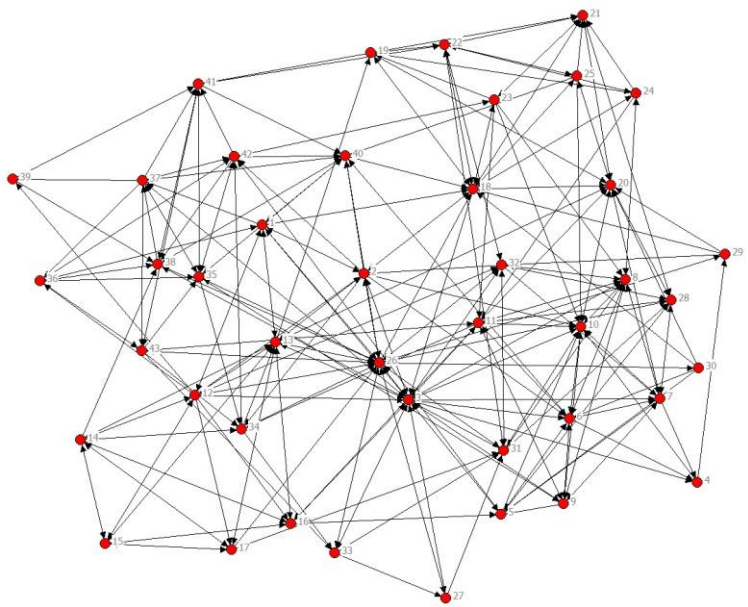
The research of Employee Social Network

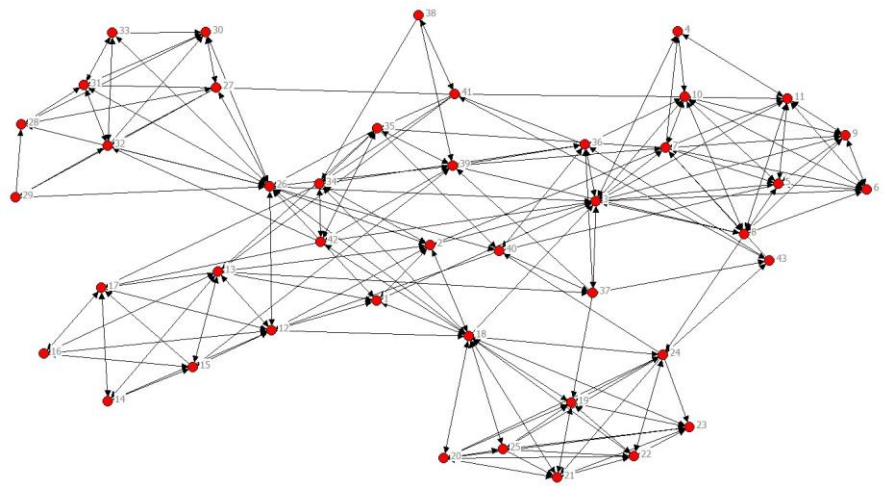
Data of 80 employees from company A's R&D department through questionnaire:

Based on mature scientific research results including
Van Scotter & Motowidlo (1996)'s theory
J.Peng (2011)'s research on Enterprise IT level
Luo Jar's research on social network……

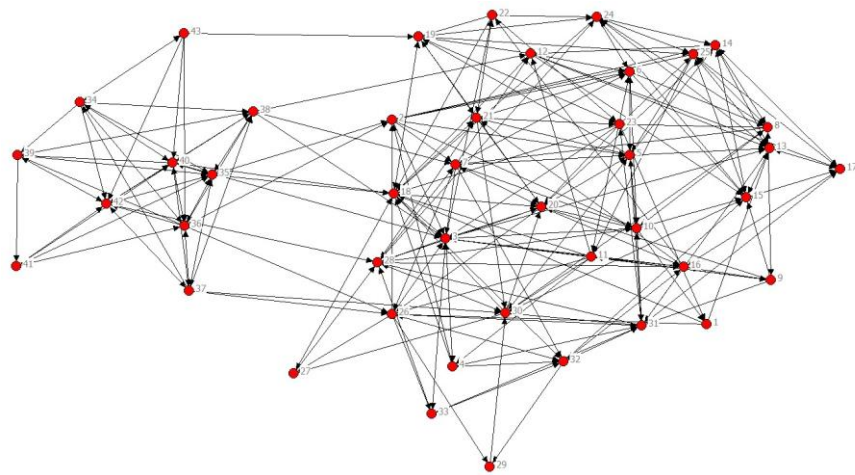
After confirm the validity and reliability of the data, build 8 different employees' social network (below shows 3 of them, using the software *UCINET*)



Work Net



Consultant Net



Emotion Net

7 key indexes are extracted to explain the **formation of network** by *Logit Model* :

$$\text{logit}\frac{p}{1-p}=\sum_k \beta_k Z_k(y)$$

$$p(Y=y|N \text{ actors})=\frac{\exp(\sum_k \beta_k Z_k(y))}{1+\exp(\sum_k \beta_k Z_k(y))}$$

- y=0 or 1 according whether there is connection between two of the employees (i and j)
- Z(y) is the behavioral characteristics (7 key indexes) of i and j
- k=1 when Z(y) is about individual attributes (job year, gender, education), k=2 when Z(y) is about behavioral characteristics (employee relationship, information share, contextual performance, IT Ability)

Variable	*B1*	*B2*	*B3*	*B4*	*B5*	*B6*	*B7*	*B8*
i Job Year	−.016	−.051	−.037	−.042	−.021	−.018	.012	.013
i Education	.082	.015	.051	−.031	.098	.024	.042	−.033
i Gender	−.117	−.087	−.102	.116	.099	.052	−.013	.115
j Job Year	.079**	.054	.043	.197***	.311***	.167***	.266**	.157***
j Education	.274***	.121	.232**	.327***	.459***	.251***	−.030	.266***
j Gender	−.308**	−.348**	−.326**	.048	.040	.244*	−.110	−.075
i relationship	.262**	.254	.098	−.020	−.015	.106	.058	.001
i Info share	.001	−.042	.119	.104	.100	−.007	.065*	.067
iContperform	−.198	−.065	−.224	−.132	−.024	−.084	.287***	−.077
i IT Ability	.125	.048	.105	.019	.025	−.049	−.224	.085
j relationship	.356***	.382***	.356***	.046	−.205*	.046	.305***	.023
j Info share	−.092	.026	.093	.028	−.012	−.009	.049	−.058
jContperform	−.055	−.231	−.246	.144	.361***	.279**	−.157	.358***
j IT Ability	−.222*	−.332**	−.370***	−.195*	−.086	−.118	−.233*	−.144
Intercept	−4.478***	−3.081**	−3.052**	−4.255***	−6.413***	−4.952***	−4.298***	−5.029***
Number of Nodes				76	Observable sides		5700	

Explore the relationships among different networks through
Multiple Regression Quadratic Assignment Procedure (QAP) via Double-Dekker Semi-Partialling

- Dependent variable: Work Net (Matrix)
- Independent variable: Emotion Net (Matrix), Consultant Net (Matrix)

Number of permutations performed: 2000

MODEL FIT

R-square	Adj R-Sqr	Probability	# of Obs
0.300	0.300	0.000	1806

REGRESSION COEFFICIENTS

Independent	Un-stdized Coefficient	Stdized Coefficient	Significance	Proportion As Large	Proportion As Small
Intercept	0.060607	0.000000			
Emotion Net	0.211358	0.206284	0.000	0.000	1.000
Consultant Net	0.460326	0.446590	0.000	0.000	1.000

Running time: 00:00:01
Output generated: 27 12月 17 00:47:42