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03•12•2013
BRUSSELS

CONFERENCE ON **ANTI-CORRUPTION** AND **ANTI-FRAUD** MEASURES IN RELATION TO THE USE OF THE EUROPEAN STRUCTURAL AND INVESTMENT FUNDS

in co-operation with

TRANSPARENCY INTERNATIONAL
the global coalition against corruption

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ARACHNE PROJECT

Risk scoring tool

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Disclaimer

- The names and companies shown in this presentation are **testdata** and should in no way be interpreted as being associated with fraud and/or irregularities.

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Objectives of the Arachne tool

- Support the Management and Control Systems of the OPs, to lower the error rate and strengthen fraud prevention and detection

- Facilitate the continuous monitoring / overview of the internal and external data regarding projects, beneficiaries and contracts/contractors

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How ?

- -> Based on a set of risk indicators and alerts
- -> Customized to the nature of OP expenditures
- -> Using some key (internal) data of the projects enriched with publicly available information (external data)

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Benefits

- Maximising limited resources and multiplicity of operations, key actors and systems,
- Promote the use of a risk based approach in the verifications of the projects (focus on most risky projects)
- Complement the risk assessment with regard to fraud alerts and irregularities
- Identify continuously possible irregular circumstances on the basis of predefined risk criteria
- Build an overall better defence against fraud and errors

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Risk types and nature - examples

Risk category	Description
Procurement	**Risk indicators on the procurement process** • Lead time between publication of the tender notice and contract signature ▪ Number of disqualified tender offers / Number of tender offers received
Contract management	**Assessment of contract management aspects of the project and comparison to the peer group** ▪ Contract addenda cost (total) for the project / Project cost ▪ Number of consortium partners
Eligibility	**Verification of the eligibility period and existence of contractors and subcontractors** ▪ Project costs outside eligibility period - before start date ▪ Project costs outside eligibility period - after end date ▪ Difference between invoice date and payment date
Performance	**Assessment of the coherence of activity sector ratios with the benchmark values** ▪ Number of people trained / Number of people to be trained ▪ Project total cost / Length in km per Project (Per Type of Road)
Concentration	**Cross-project and cross-operational program checks** ▪ Beneficiaries involved in multiple Projects ▪ Beneficiaries involved in multiple Operating Programs ▪ Project partners involved in multiple Projects
Other	**Basic checks on logicality and reasonability of project data** ▪ EC assistance / Total Project cost ▪ Fixed assets / Project cost

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Example of risk calculation

Alerts	
Alert	**Value**
Overall Score	34/50
Procurement Overall Score	18/50
Contract Management Overall Score	50/50
Eligibility Overall Score	-/50
Performance Overall Score	-/50
Concentration Overall Score	35/50
Other Overall Score	50/50
Reputational Fraud Alerts Overall Score	20/50

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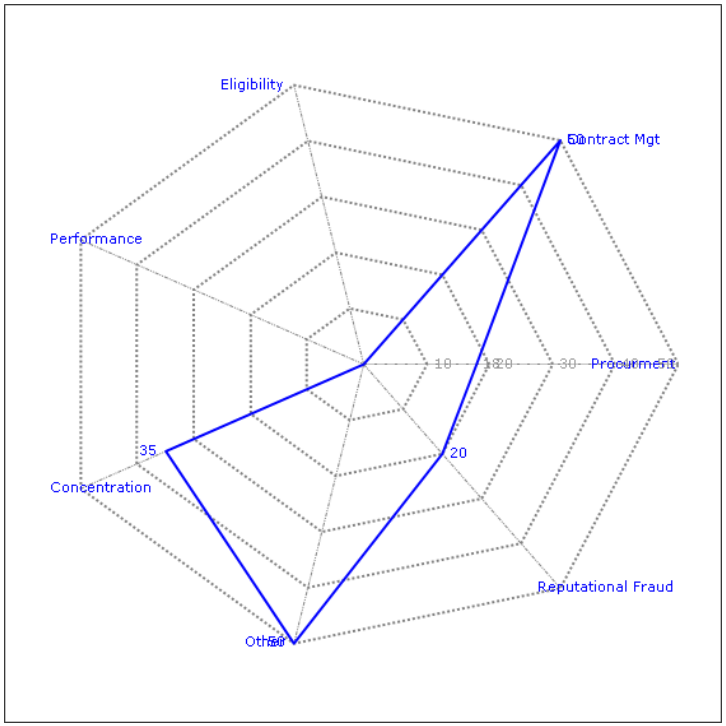
Visualisation of risk types



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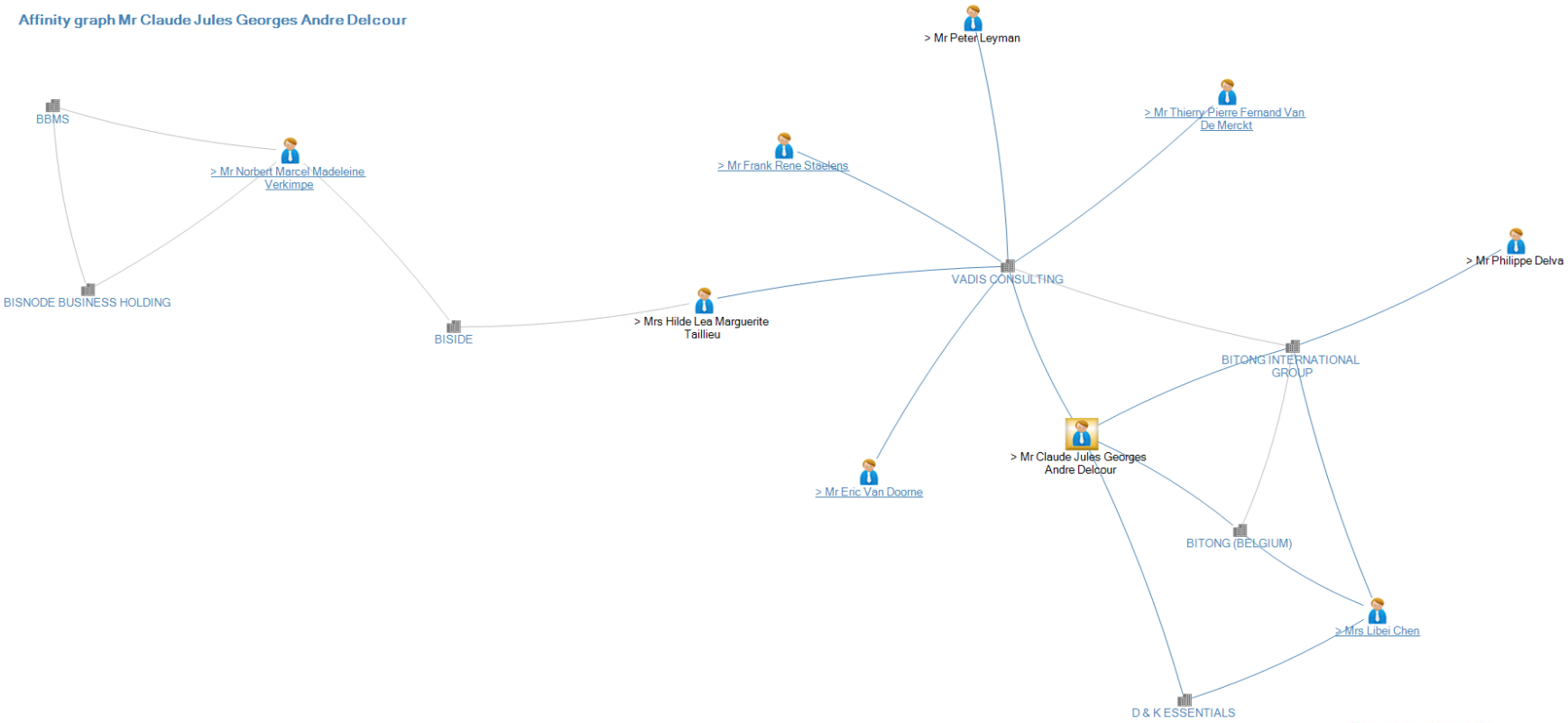
Visualisation of links



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Consistence with fraud risk assessment tool

RISK DESCRIPTION	
Collusive bidding	Bidders manipulate the competitve procedure organised by a beneficiary to win a contract by colluding with other bidders or setting up fake bidders: - collusive bidding including bidding by interlinked companies or - phantom service provider
Control ref	**Control description**
Collusive bidding	
IC 4.1	The MA requires that beneficiaries have controls in place to detect persistently high or unusual bid data (such as bid evaluators that have a knowledge of the marketplace) and to unusual relationships between third parties (e.g. rotation of contracts).The MA reviews the operation of these controls for a sample of beneficiaries.
IC 4.2	The MA requires that beneficiaries 'benchmark' price comparators for standard goods or services. The MA reviews the operation of these controls for a sample of beneficiaries.
IC 4.3	The MA provides training for concerned beneficiaries in preventing and detecting fraudulent behaviour within public procurement.
IC 4.4	The MA implements and publicises a whistle-blowing mechanism for suspected fraudulent behaviour.
IC 4.5	Check whether companies participating in a tender (in particular three offers' procedures) are interlinked (management, owners etc) using open sources or ARACHNE
IC 4.6	Check whether companies that had participated in a tender subsequently become contractor or subcontractor of the winning tenderer
Phantom service provider	
IC 4.11	The MA requires the beneficiary to complete background checks on all third parties. This can include general website checks, companies house information etc. The MA reviews the operation of these controls for a sample of beneficiaries.
IC 4.12	The MA implements and publicises a whistle-blowing mechanism for suspected fraudulent behaviour.

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Procurement and contract management – indicators

Procurement Overall Score	18/50
Lead time between publication and contract signature	3/10
Percentage disqualified tender offers vs received	3/10
Number of valid tenderers	1/10
Contracted amounts via closed tenders vs project cost	-/10
Number of contract addenda compared to sector average	5/10
Financial correction	-/10
Contract Management Overall Score	50/50
Contract addenda cost vs project cost	10/10
Contract addenda cost vs contracted amount	10/10
Difference final contract end date and initial contract end date	-/10
Number of consortium partners	5/10
Contract modifications	-/10
Key experts change	-/10
Key experts linked to multiple projects	-/10
High percentage of cost allocations within the last 60 days	-/10
Contracted amount vs annual turnover of the contractor	0/10
External service provider	10/10

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Concentration risk indicators

Concentration Overall Score	35/50	
Beneficiaries involved in multiple projects	10/10	
Beneficiaries involved in multiple OPs	0/10	
Partners involved in multiple projects	-/10	
Partners involved in multiple OPs	-/10	
Suppliers/Contractors involved in multiple projects	10/10	
Suppliers/Contractors involved in multiple projects of the same beneficiary	10/10	
Suppliers/Contractors involved in multiple OPs	0/10	
Personnel linked to multiple projects	-/10	
Consortium partners linked to multiple projects	10/10	
Consortium partners involved in multiple projects of the same beneficiary	10/10	
SubContractors linked to multiple projects	-/10	
SubContractors linked to multiple projects of the same beneficiary	-/10	
Supervision contractor multiple times in same constellation with work contractors	-/10	

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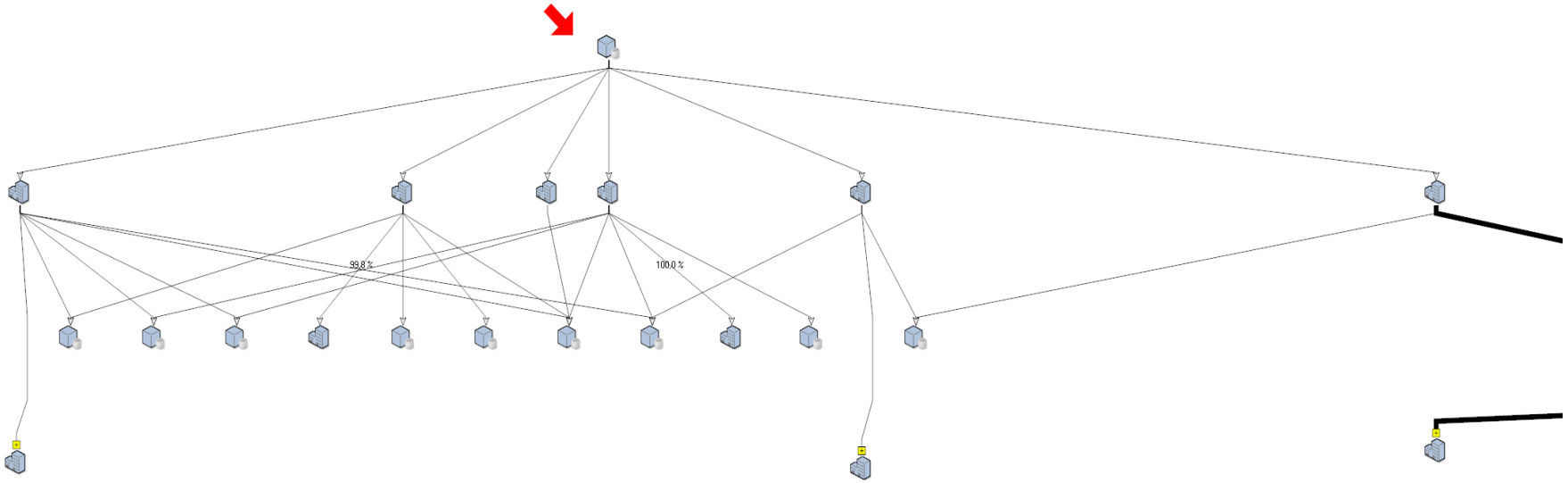
Project: surrounding graph



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Next steps – on going

- Webmining pilot exercise
- Predictive model for fraud in public procurement

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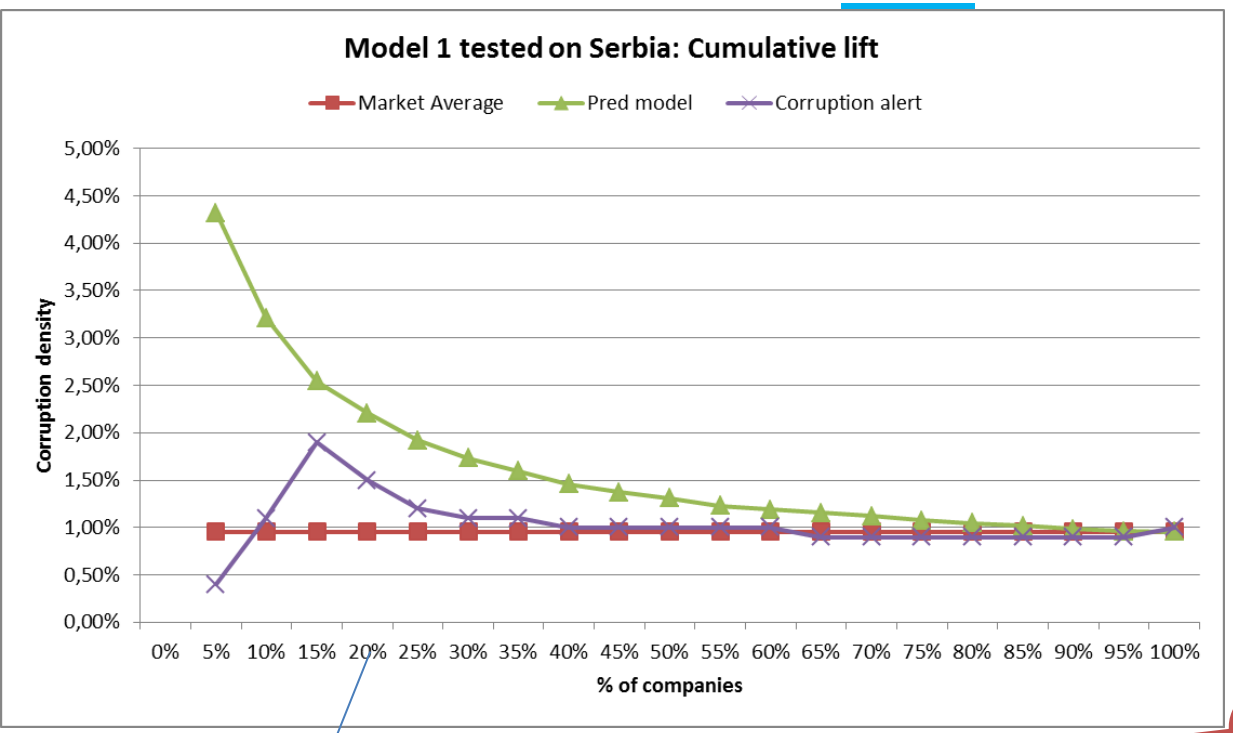

Companies are ranked by corruption risk by predictive model versus corruption alert.

Lift reveals how much more likely we are to detect corruption cases if we use the model than if we use a random sample of companies.

Third party monitoring alert: PEP, sensitive regions

		Corruption alert	Pred model	no model or alert
% of companies	# companies	# corruption cases	# corruption cases	# corruption cases
5%	4144	17	179	39
5%	4143	77	87	38
5%	4143	136	50	39
5%	**4143**	**11**	**50**	**38**
20%	**16573**	**241**	**366**	**154**

Model = **125 more** true positives than alert computation

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Thank you!

Your questions and/or observations are welcome

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