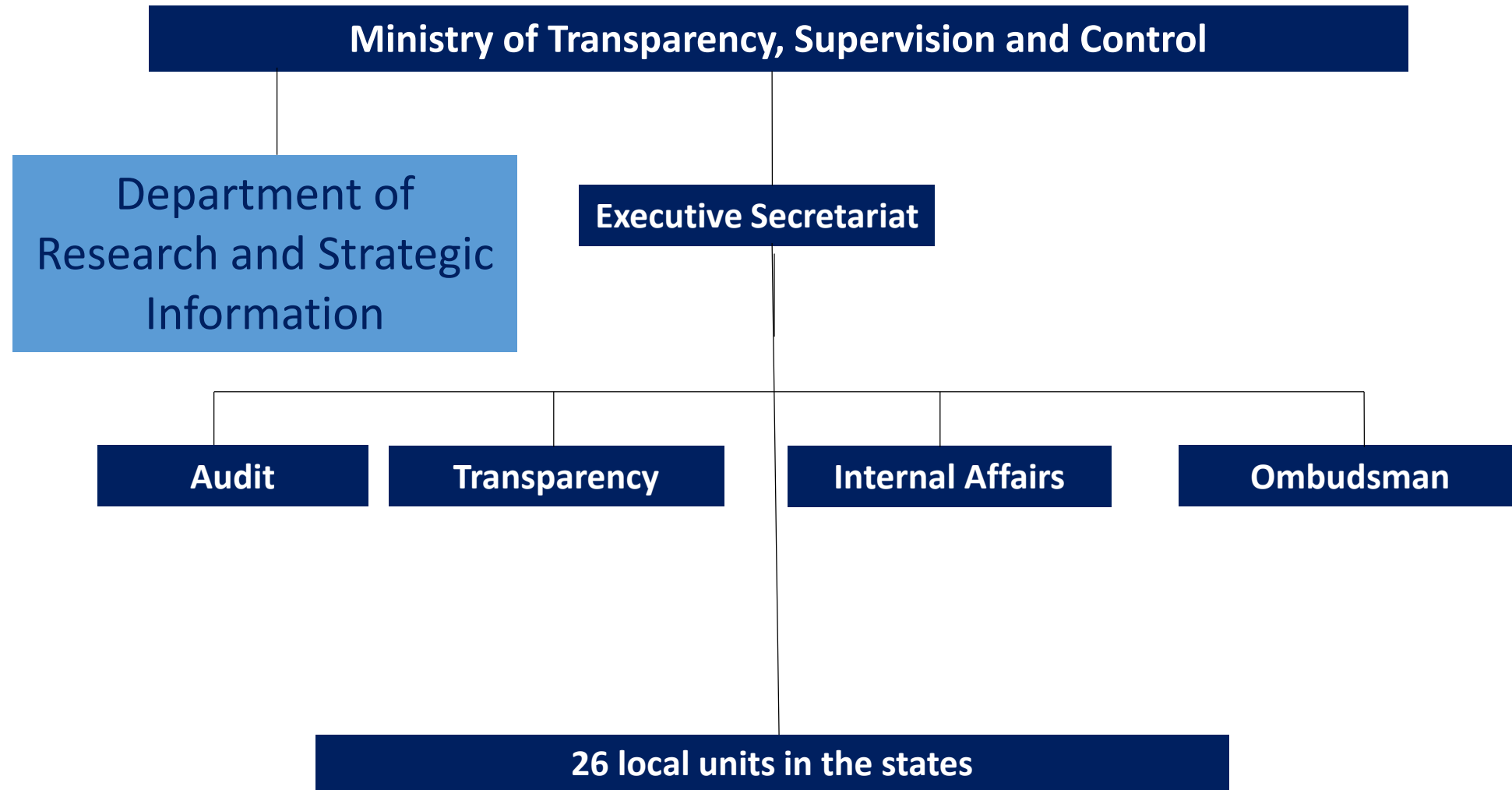
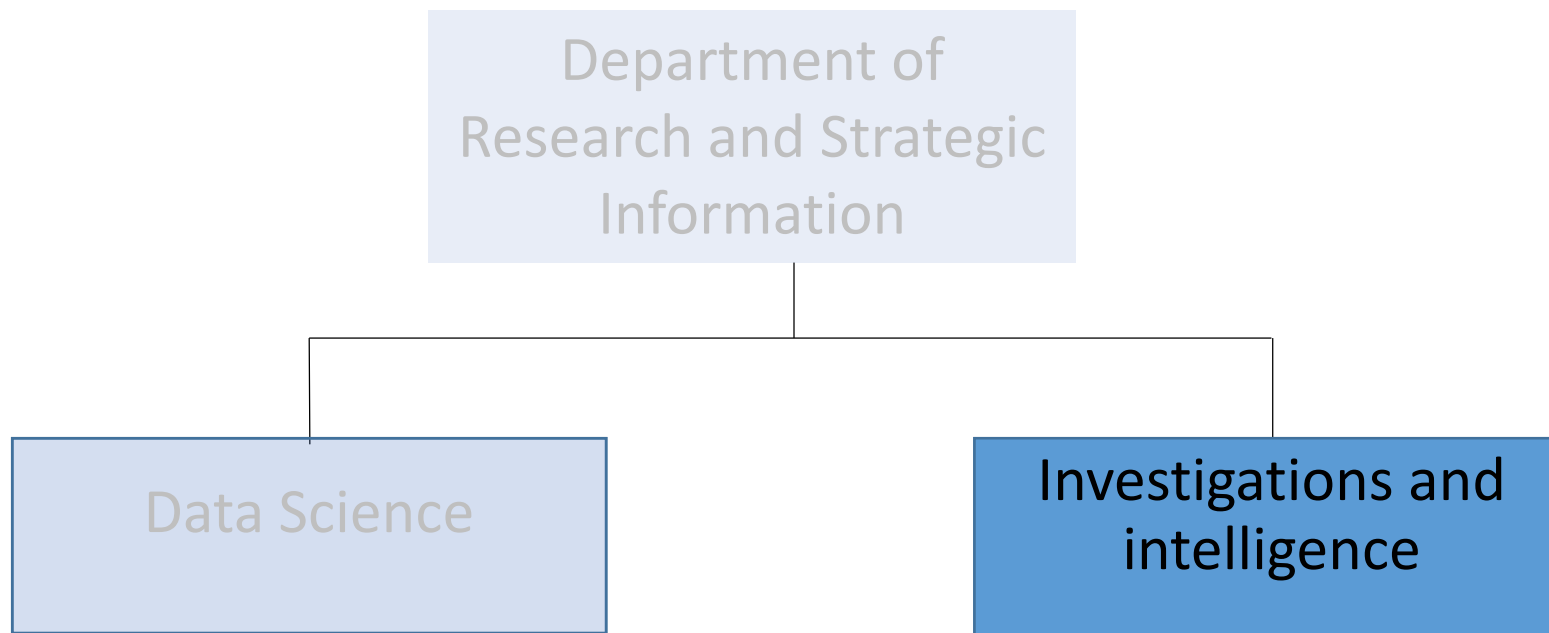




Department of Research and Strategic Information

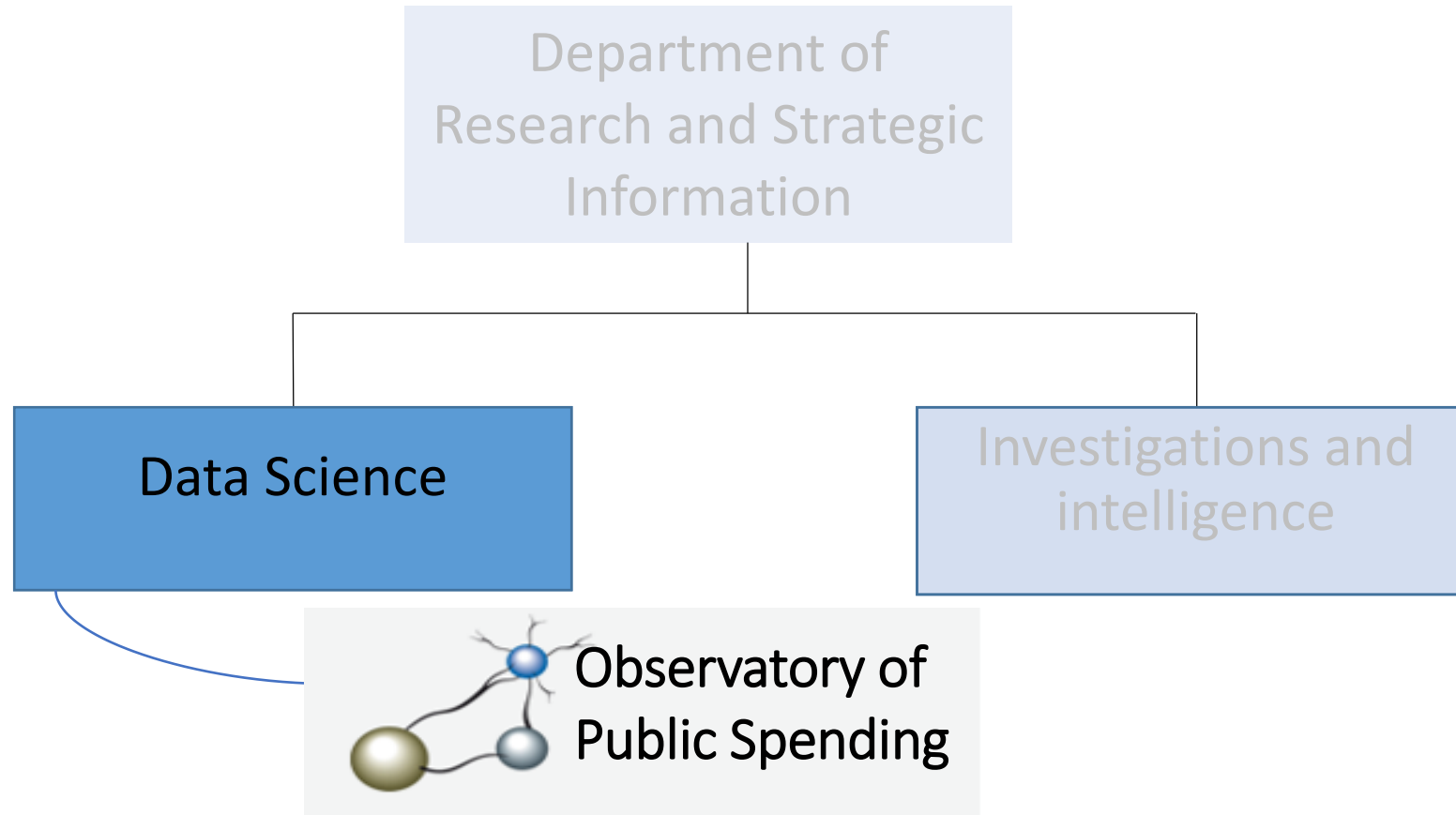






Division of Strategic Information

- ✓ Systematic Examination of Income Statements / Assets / Atypical financial transactions
- ✓ Investigations
- ✓ Analysis of nominations for senior positions in the public sector
- ✓ Intelligence operations





We do Data Science





Team of 13
data scientists

✓ Support for decision-making

- ✓ Audit trails
- ✓ Risk assessment
- ✓ Data analysis
- ✓ Predictive analysis



Why a Data Science
area in a government
auditing body?





Customer feedback



DW



Inventory



Forums & Some



Sales



Production



IT Infrastructure + Techniques



Data Science



Results

Our Inputs = Databases



Public spendings



Public Biddings



Contracts and Grants



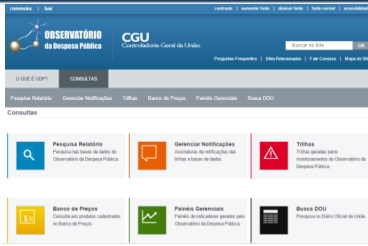
Public Employees



Social Indicators



School Meals



Continuous
Auditing

The Red Flag System

217 Audit trails

Welfare Programs

- ✓ Dead beneficiaries
- ✓ Businessman
- ✓ Politicians
- ✓ Public Servants
- ✓ ...

Biddings

- ✓ Link between bidders
- ✓ Link between suppliers and public servants
- ✓ Fractional Purchase
- ✓ ...

Government Spending

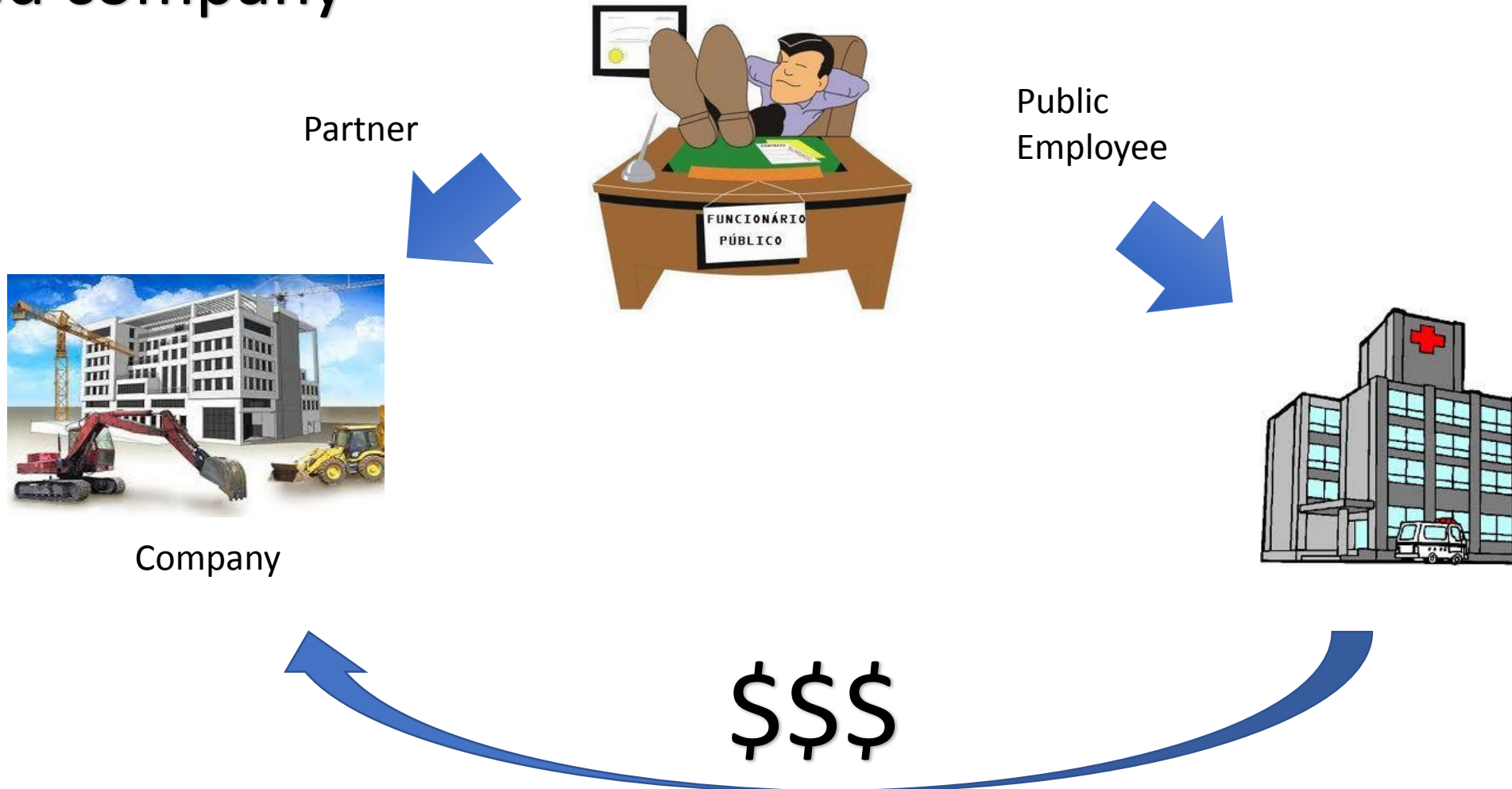
- ✓ Atypical Spendings
- ✓ Credit Card used during vacation
- ✓ ...





- Same partners
- Same address

Link between the public servant and the hired company





Classification

Risk of Suppliers

Compras Empenhos Empenhos: TI x não TI Pagamentos **Risco de Fornecedores**

OBSERVATÓRIO da Despesa Pública

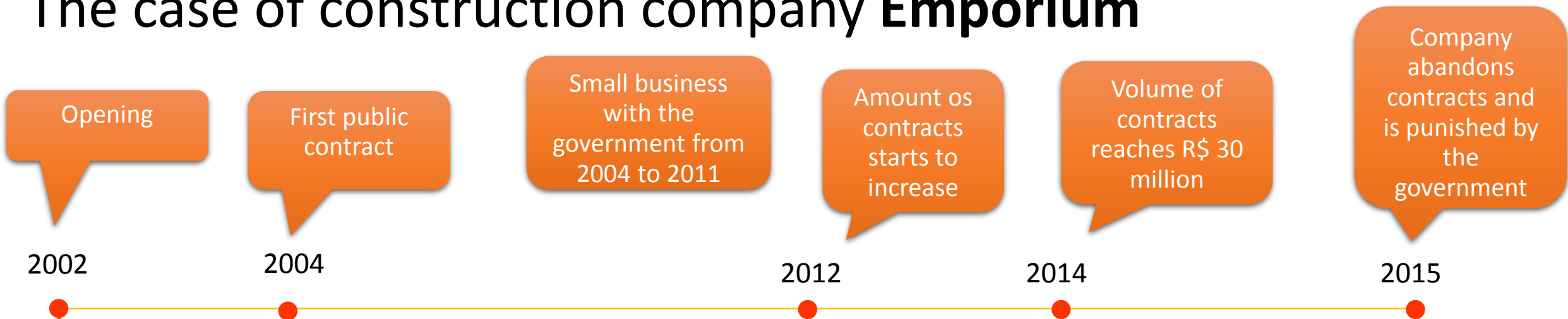
Cálculo da probabilidade de risco de fornecedores de TI, conforme o índice de risco e o órgão superior

INDICADORES DE CÁLCULO DE RISCO FORNECEDORES E SEUS NÍVEIS DE RISCO RISCO POR QUANTIDADES RISCO POR VALORES

CNPJ/CPF	Nome do Fornecedor	Nome do Órgão Superior	Qty. de Empenhos	Total Empenhado	Risco	Nível de Risco
		MINISTERIO DA SAUDE	1	R\$ 5.000,00	1,00	Green, Yellow, Red
		MINISTERIO DA EDUCACAO	1	R\$ 1.628,98	1,00	Green, Yellow, Red
		MINISTERIO DA DEFESA	1	R\$ 1.280,00	1,00	Green, Yellow, Red
		COMANDO DA MARINHA	1	R\$ 2.935,00	1,00	Green, Yellow, Red
		MINISTERIO DA EDUCACAO	1	R\$ 569,99	0,83	Green, Yellow, Red
		MINIST. DA AGRICUL. PECUARIA E ABASTECIMENTO	1	R\$ 53,50	0,83	Green, Yellow, Red
		MINISTERIO DO DESENVOLVIM. SOCIAL E AGRARIO	4	R\$ 39.798,00	0,65	Green, Yellow, Red
		MINISTERIO DA SAUDE	1	R\$ 68.857,50	0,65	Green, Yellow, Red
		MINISTERIO DA DEFESA	1	R\$ 5.460,00	0,65	Green, Yellow, Red
		MINISTERIO DA JUSTICA E CIDADANIA	8	R\$ 195.054,61	0,57	Green, Yellow, Red
		MINISTERIO DA DEFESA	1	R\$ 0,00	0,76	Green, Yellow, Red
		MINISTERIO DE MINAS E ENERGIA	17	R\$ 6.981,80	0,54	Green, Yellow, Red
		MINISTERIO DA SAUDE	1	R\$ 600,00	0,54	Green, Yellow, Red
		MINISTERIO DA FAZENDA	1	R\$ 328,50	0,54	Green, Yellow, Red
		MINISTERIO DA EDUCACAO	3	R\$ 10.057,40	0,54	Green, Yellow, Red
		MINISTERIO DA DEFESA	20	R\$ 25.936,80	0,54	Green, Yellow, Red

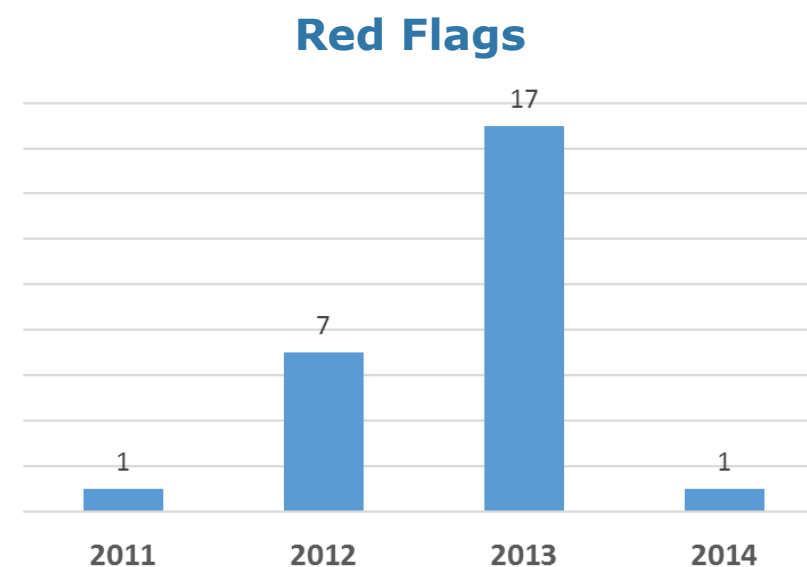
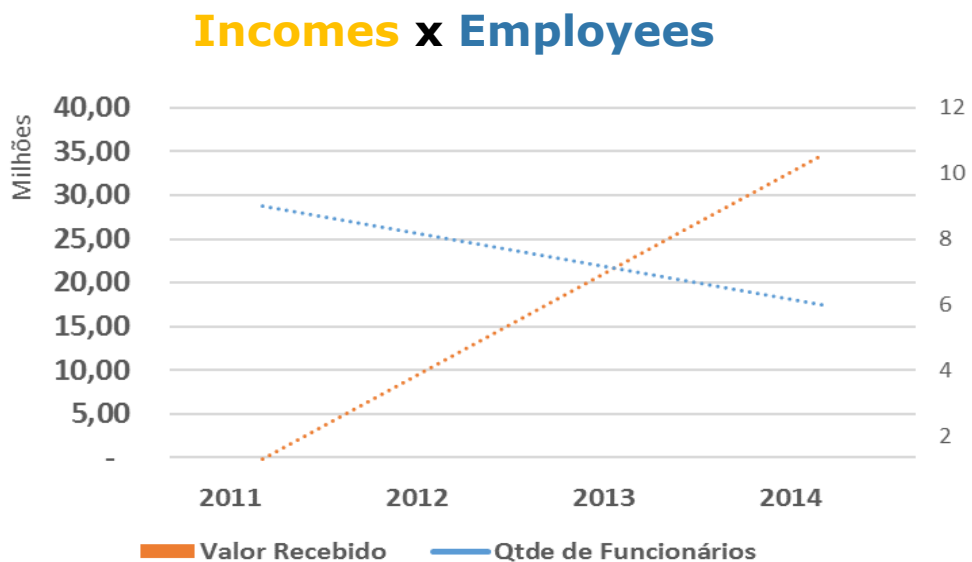


The case of construction company Emporium



Total of 40 registered activities:

- Ambulance sales
- Trucks
- Stationary store
- Business Cards
- Gifts
- Car Rental





180
features



**Clustering and
Classification**

Analysing Images of Companies



Automatic image classification to identify “fake companies”



R\$ 1.399.894,26





R\$ 1.990.191,10





R\$ 1.066.003,86





Classification

Risk of Corruption

MARA Mapeamento de Risco de Corrupção da Administração Pública Federal

Dashboard | Riscos | Galitros | Administração

Informações do Dirigente

Nome: [Redacted]
CPF: [Redacted]
Data de nasc.: [Redacted]
Unidades em lotação: [Redacted]
Risco do dirigente: Alto

Unidade(s) de lotação

Cargo(s): [Redacted]
Natureza(s): [Redacted]
Data nomeação: [Redacted]
Risco no ambiente: Baixo

Cargo(s): [Redacted]
Natureza(s): [Redacted]
Data nomeação: [Redacted]
Risco no ambiente: Baixo

Relatórios

[Alerta de Risco Síntese](#)

Gráfico

Risco do Dirigente

Risco	Intervalo (%)
Muito alto	80% - 99%
Alto	60% - 80%
Médio	40% - 60%
Baixo	20% - 40%
Muito baixo	1% - 20%

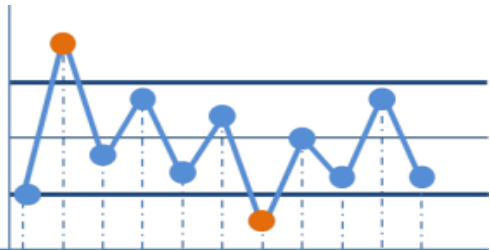
Legenda

- Muito alto (80% - 99%)
- Alto (60% - 80%)
- Médio (40% - 60%)
- Baixo (20% - 40%)
- Muito baixo (1% - 20%)

T Titular
S Substituto
I Interno

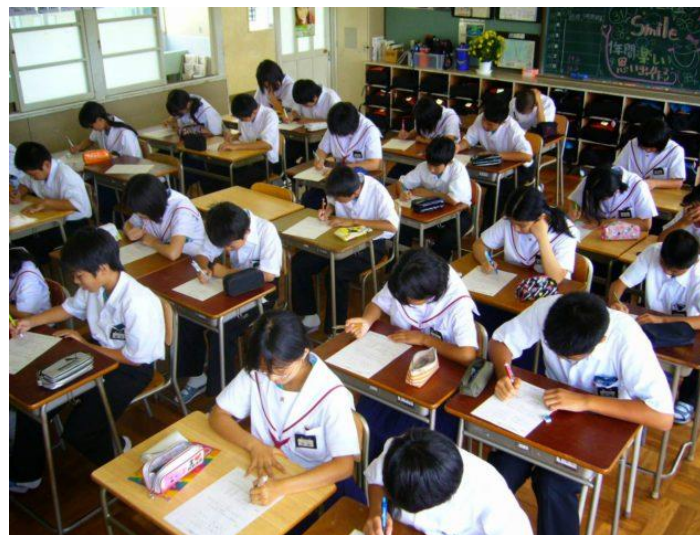


Disciplinary Processes



Anomaly Detection

Analysing Government Grants



14/12/2010 20h27 - Atualizado em 15/12/2010 08h53

CGU investiga suspeita de venda de entidades que recebem verba pública

Organizações são vendidas por até R\$ 22 mil e anunciadas pela internet. Destinação de recursos a entidade levou à renúncia de relator do Orçamento.



➤ 45 NGO's

➤ For sale!



➤ 2,593 km²

➤ 7,328 inhabitants



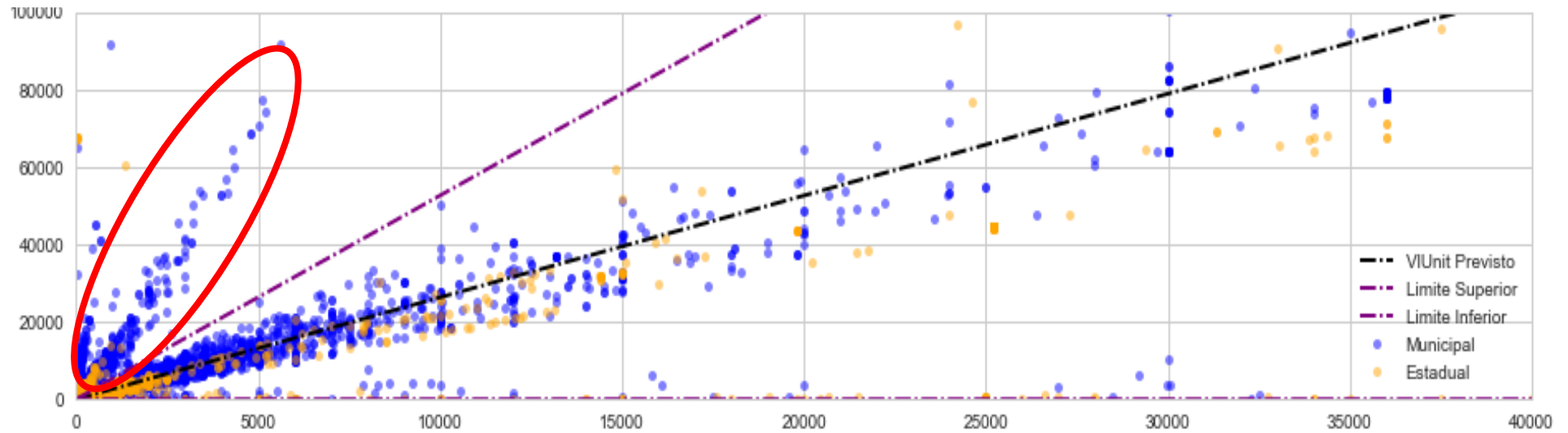
Anomaly
Detection

Identifying overpricing in school meals products



Rice

Value



Quantity



Publications and Awards

Articles in Journals



Efficiency in Public Administration



UN – Public Service Award



TI and Government



Information management



Cost and Quality Information of Spending in the Public Sector



Ministry of Transparency, Supervision and Control

Department of Research and Strategic Information

Thank you!!!

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leonardo.sales@cgu.gov.br

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MINISTÉRIO DA
TRANSPARÊNCIA E
CONTROLADORIA-GERAL DA UNIÃO

