



Institutional Presentation

June/2015

About
Genoa

GENOA 

Mission

“Help our costumers to excel in every logistic and supply chain challenge by applying state-of-the-art methodologies and counting on extraordinary consulting team”

Partnerships:



Scope



BUSINESS STRUCTURING

- technical and commercial due diligences in port-logistics infrastructure projects;
- strategic consulting in port logistics business;



LOGISTIC EXPERTISE

- development of operational logistics and port consultancy projects, focused on the development of simulation and optimization models

Genoa
Business
Structuring



Logistics Systems Business Investment Structuring

- development of technical commercials due diligences;
- development of technical-commercial analysis to validation and optimization of investments in logistics infrastructure;
- partnership with key financial players and infrastructure investment players;
- USD 250 million in logistics infrastructure projects endorsed in 2014;



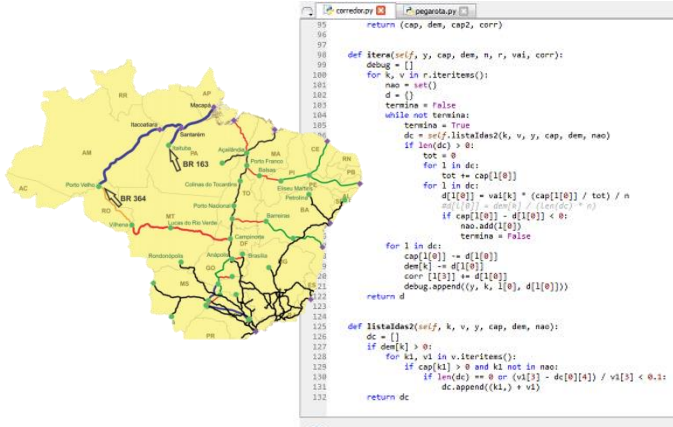
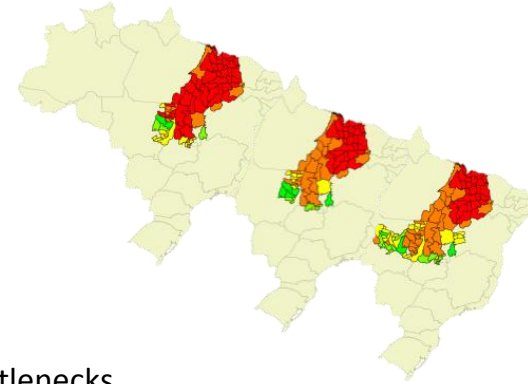
Caisse de dépôt et placement
du Québec



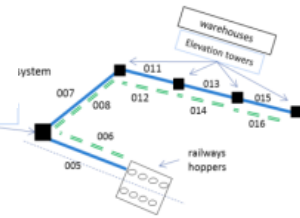
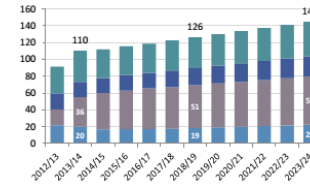
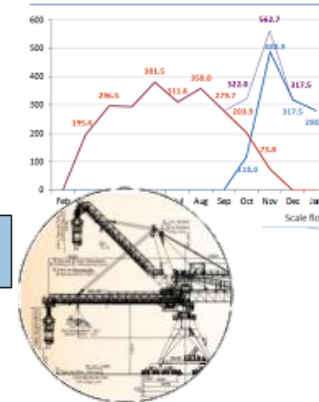
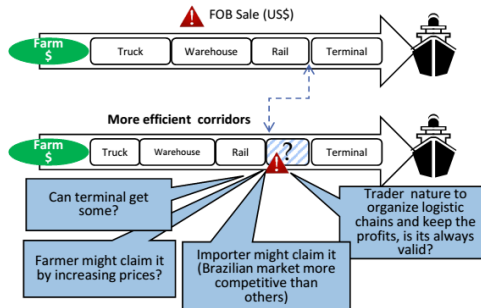
Investment Structuring Assessment in Logistic Systems

General Scope Of The Technical Support Activities In Logistics Investment Processes

- evaluation of revenue structures [tariffs] and costs;
- market and business analysis on the Brazilian scenario;
- infrastructure assessment - EPC and risks;
- ramp-up, CAPEX and OPEX analysis and validation;
- computational simulation of throughput capacity, main performance KPIs, bottlenecks identification, etc.



Capture of efficient logistics corridors gains



Genoa
Logistic
Expertise



Some of our clients

INTERNATIONAL  PAPER

 **PETROBRAS**




queiroz galvão

NOVA | AGRI

HSBC 

ALG TRANSPORTATION
INFRASTRUCTURE
& LOGISTICS

 **PORTO DE
VITÓRIA**
CODESA - AUTORIDADE PORTUÁRIA

 **Secretaria de Portos - SEP
COMPANHIA DOCS DO PARÁ
Autoridade Portuária**

GELEHRTER®
consultoria ltda

 **Hemobrás**
Empresa brasileira de hemoderivados e biotecnologia

 **COMPARTI
bike**

 **Hidrovias do Brasil**

 **INSTITUTO
DE ESTUDOS
MARÍTIMOS**

GENOA 

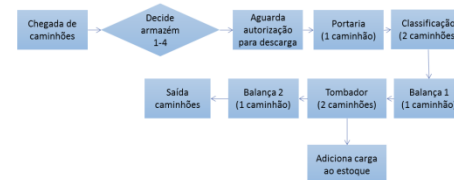
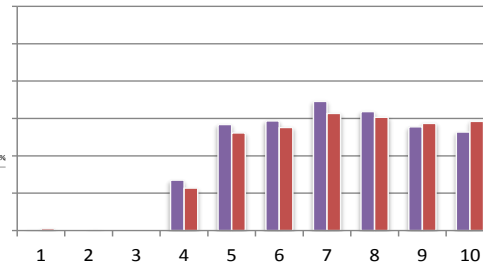
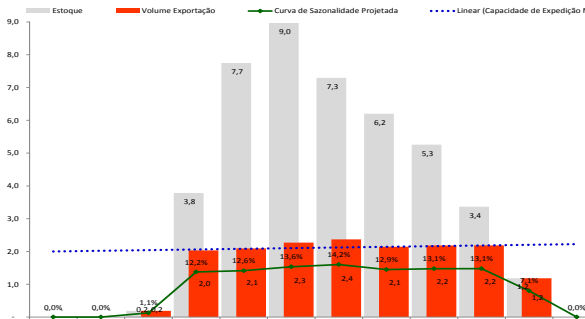
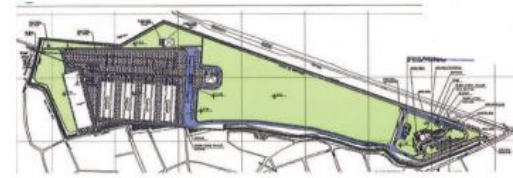
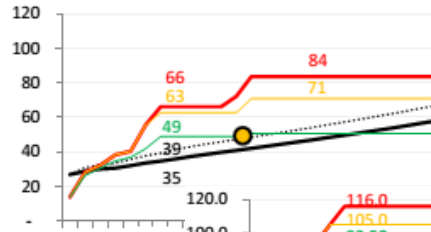
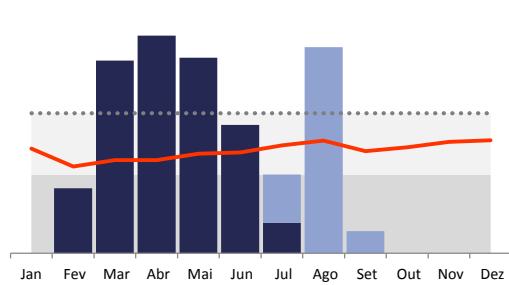
Cases

**Simulation projects
with the participation
of Genoa team**



Simulation and planning of grain commodities terminals

- ramp-up analysis at grains terminals: throughput capacity x structure ramp-up x demand projection;
- inbound and outbound logistics analysis.



Simulation and planning of grain commodities terminals

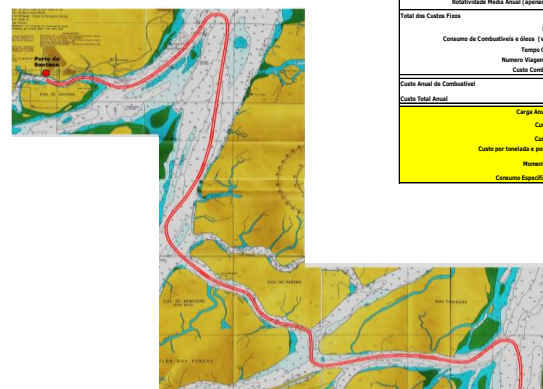
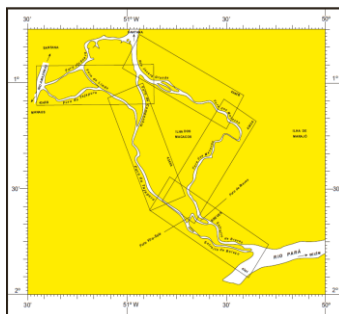
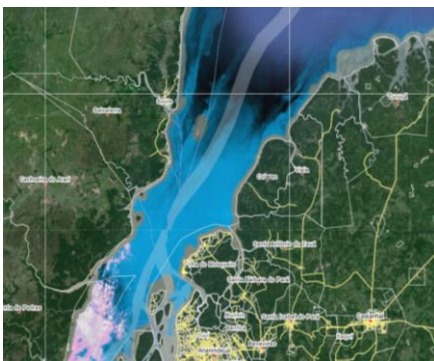
- ramp-up analysis at grains terminals: throughput capacity x structure ramp-up x demand projection;
- inbound and outbound logistics analysis.



Or link: <https://youtu.be/FaxzsX6qkRg>

Planning of a waterway iron ore transportation system

- Assessment of the physical and technical conditions of navigation within the region under evaluation;
- Development of a simulation model for the iron ore barges fleet planning;

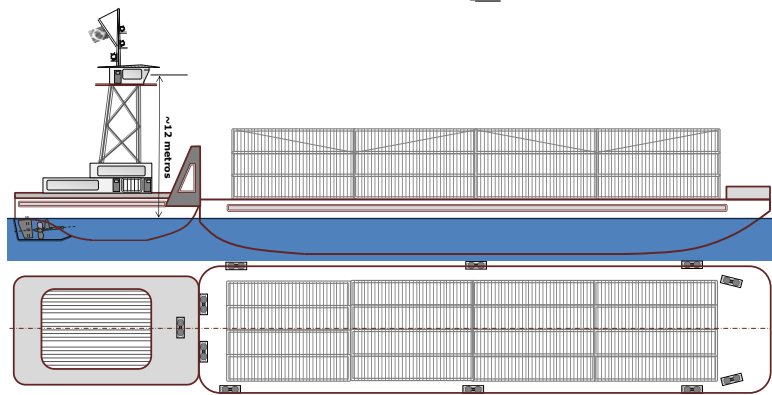
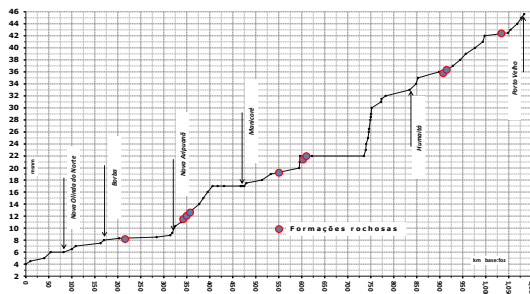
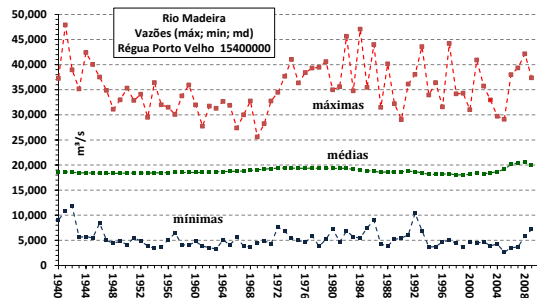
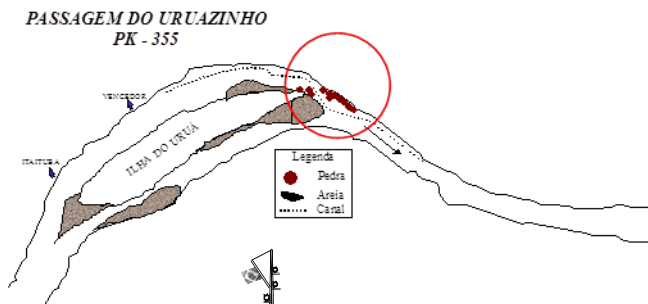
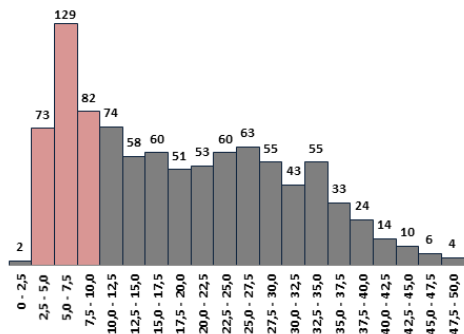


Auto-propulsão Amapá		Origem	Santana	Santana
		Destino	Vila do Conde	Vila do Conde
Distância de Transporte (por sentido)	km	-	650	650
Numero açoas no Trilho (por sentido)	h	-	0	0
Tempo por Eclusagem Total	h	-	0	0
Capacidade de Carga	t/h	-	1,000	1,000
Capacidade de Eclusagem	t/h	-	1,000	1,000
Tempo Arrumação Auto-propulsão	h	-	5,00	5,00
Tempo de Carregamento	h	-	13,33	20,00
Tempo de Descarregamento	h	-	13,33	20,00
Tempo Cíclico no Paralelo	h	-	-	-
Retorno Carregado	%	-	-	-
Capacidade Carga Média Combeto (5% viagem retorno)	t	-	20,000	20,000
Velocidade do Combeto Carregado	km/h	-	17,54	17,54
Velocidade do Combeto Vazio	km/h	-	19,14	19,14
Carga de Retorno (% das viagens)	%	-	-	-
Massa Operacional/ano	-	-	13,00	13,00
Tempo Navegação Média (dele sentido)	h	-	74,11	74,11
Tempo em Eclusas (dele sentido)	h	-	-	-
Tempo em Terminais	h	-	31,67	45,10
Tempo Total Viagem Retorno	h	-	106	139
Rotatividade Média Anual (com eclusas, terminais e sentido)	-	-	0,78	0,63
Rotatividade Média Anual (apenas com terminais)	-	-	0,70	0,62
Total das Custas Fixas	R\$/ano	-	1,255+07	1,255+07
Potência Nominal	HP	-	6,000	6,000
Consumo de Combustível e classe (segundo velocidade)	l/viagem red	-	100,376	117,376
Tempo Operacional/ano	horas	-	8,760	8,760
Numero Viagens Retorno/ano	-	-	83	73
Custo Combustível (litros)	R\$/l	-	2,60	2,60
Custo Anual de Combustível	R\$	-	1,995+07	3,145+07
Custo Total Anual	R\$	-	3,245+07	3,395+07
Carga Anual Transportada	t	-	1,655,338	1,445,706
Custo por tonelada	R\$/t	-	19,59	23,67
Custo por tonelada	R\$/t	-	6,52	16,83
Custo por tonelada e por quilometro (lit)	R\$/t/km	-	0,0261	0,0328
Momento de Transporte	Mu/ano	-	8,926+10	7,026+10
Consumo Especifico Combustível	l/Mu	-	1,026-04	1,202-04

#	Capac. Embarc. (t)	Núm. de Empurr. ou Navios	Barcaças Extras SANT	Barcaças Extras VDC	Taxa SANT	Taxa VDC (tph)	Ocup. Berço SANT (%)	Ocup. Berço VDC (%)	Carga Total (MTPA)	Ciclos por ano	Ciclo médio (hs/ciclo)	Tempo Porto SANT (hs/ciclo)	Tempo Porto VDC (hs/ciclo)	Tempo Ida (hs/ciclo)	Tempo Volta (hs/ciclo)
1	1000	1	0	0	100	100	100	100	1000	100	100	100	100	100	100
2	1000	2	0	0	100	100	100	100	1000	100	100	100	100	100	100
3	1000	3	0	0	100	100	100	100	1000	100	100	100	100	100	100
4	1000	4	0	0	100	100	100	100	1000	100	100	100	100	100	100
5	1000	5	0	0	100	100	100	100	1000	100	100	100	100	100	100
6	1000	6	0	0	100	100	100	100	1000	100	100	100	100	100	100
7	1000	7	0	0	100	100	100	100	1000	100	100	100	100	100	100
8	1000	8	0	0	100	100	100	100	1000	100	100	100	100	100	100
9	1000	9	0	0	100	100	100	100	1000	100	100	100	100	100	100
10	1000	10	0	0	100	100	100	100	1000	100	100	100	100	100	100

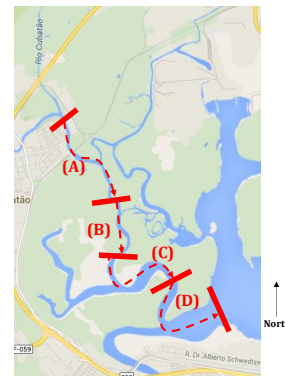
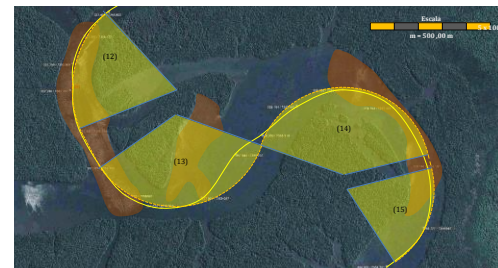
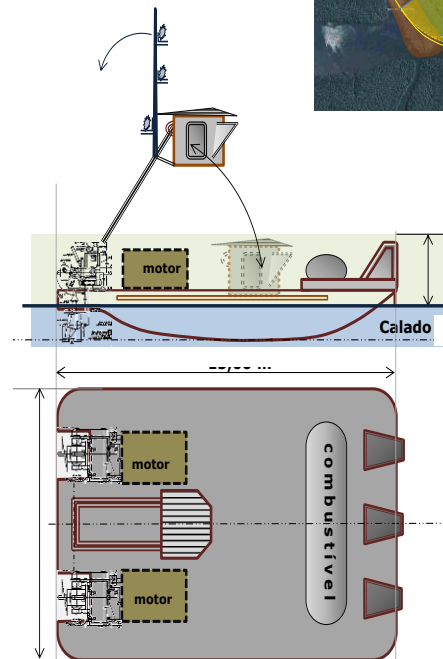
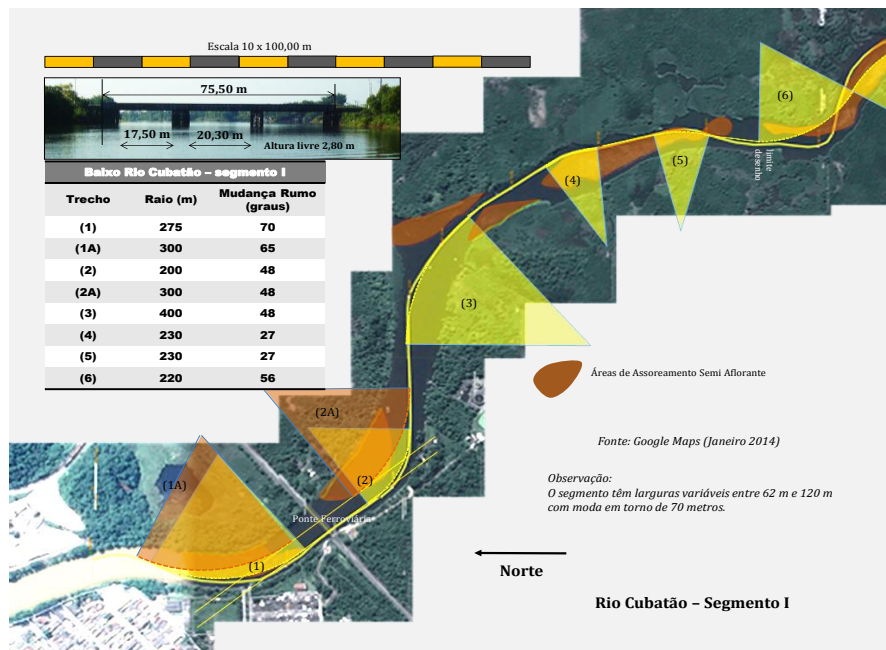
Planning of a waterway container transportation system

- technical-operational evaluation of origin and destination cargo ports;
- consideration and study of rainfall and physical constraints of the waterway;
- planning the convoy and total system transportation capacity.



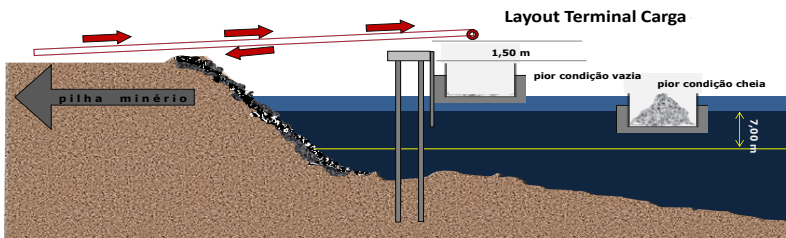
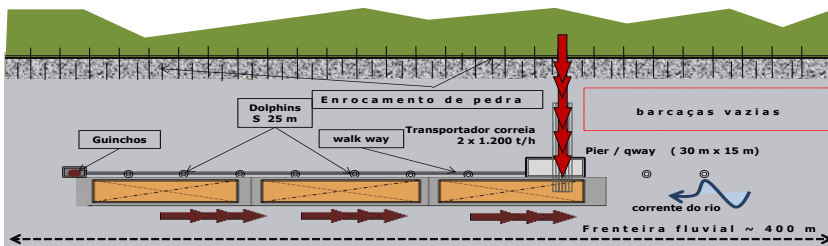
Evaluation of physical and technical navigation conditions

- study the physical navigation of the region of interest;
- determination of the expected convoy size and dimensions;



Port layout for iron ore terminals

- evaluation and proposition of port layout;
- evaluation of CAPEX and OPEX;
- Determination of operational KPIs, occupancy levels and other operational indicators.

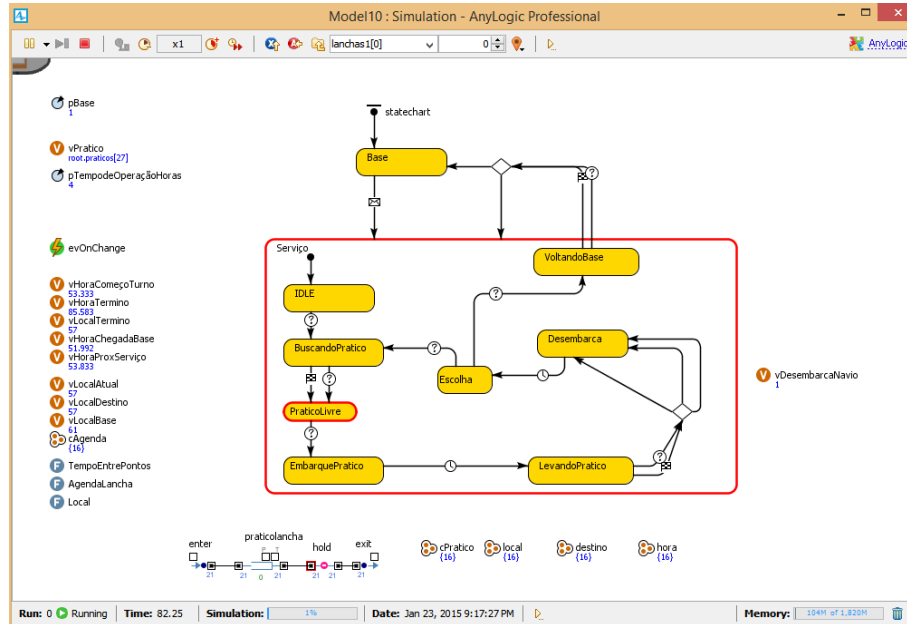


Informações sobre o Comboio		
Características do Comboio		
Numero de chatas em linha	-	
Numero chatas lado a lado	-	
Comprimento da chata	m	
Boça da chata	m	
Calado da Chata	m	
Comprimento do Empilhador	m	
Numero de motores principais	-	
Folga para motores (parada brusca, manobras, etc) - carregado	-	
Folga para motores (parada brusca, manobras, etc) - leve	-	
Tipo de Propulsão (1 - convencional 1,2 - tubo Kort 2,3 - estirado)	-	
Potência Motor Boat Thruster ou Lemas Pora	HP	
Potência de cada motor	HP	
Condições Econômicas e Operacionais		
Tempo de Desnavegação Comboio	anos	
Retorno anual em relação ao investimento	%	
Taxa de juros anual	%	
Tempo Remuneração	anos	
Custo Combustível	l	
Carga de Retorno	%	
Horas de Operação ao Ano	-	



Sizing Pilot Boat Fleet Management and Optimization Support

- goal of the project was to increase the efficiency of the pilot boats fleet considering future demand, and evaluating the crew shifts, operational issues and service level;
- development of a computer simulation model and a dynamic routing optimization algorithm.



Prioridade de atracação nos berços de exportação

	Barçaça	Handy	Handymax	Panamax	Baby Cape	Capesize	Valemax
Preencher os berços	Classe 1	Classe 2	Classe 3	Classe 4	Classe 5	Classe 6	Classe 7
Prioridade 1	5	2	2	2	2	1	
Prioridade 2	6	3	3	3	3	2	
Prioridade 3	7	4	4	4	4		
Prioridade 4	8						

Exportação

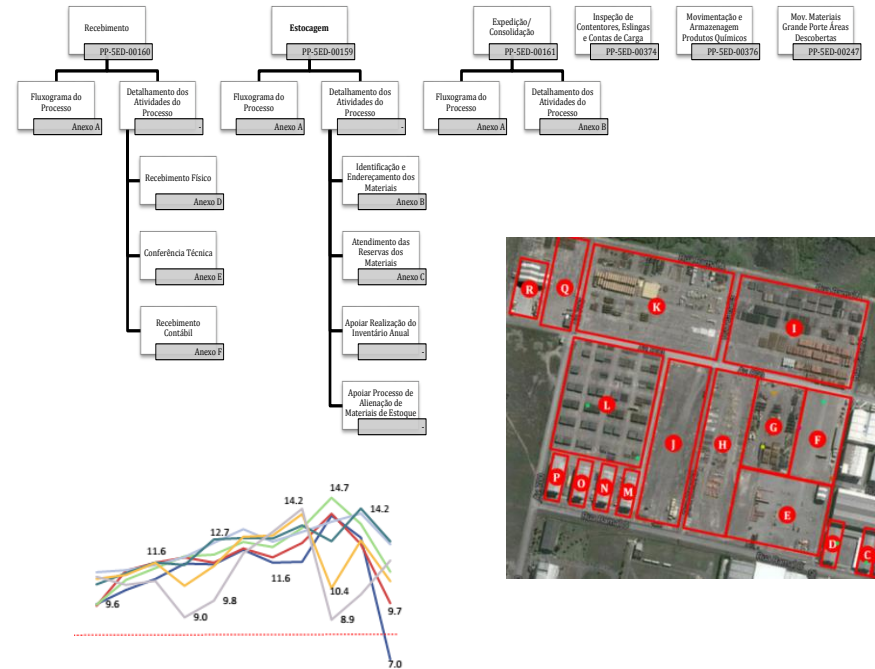
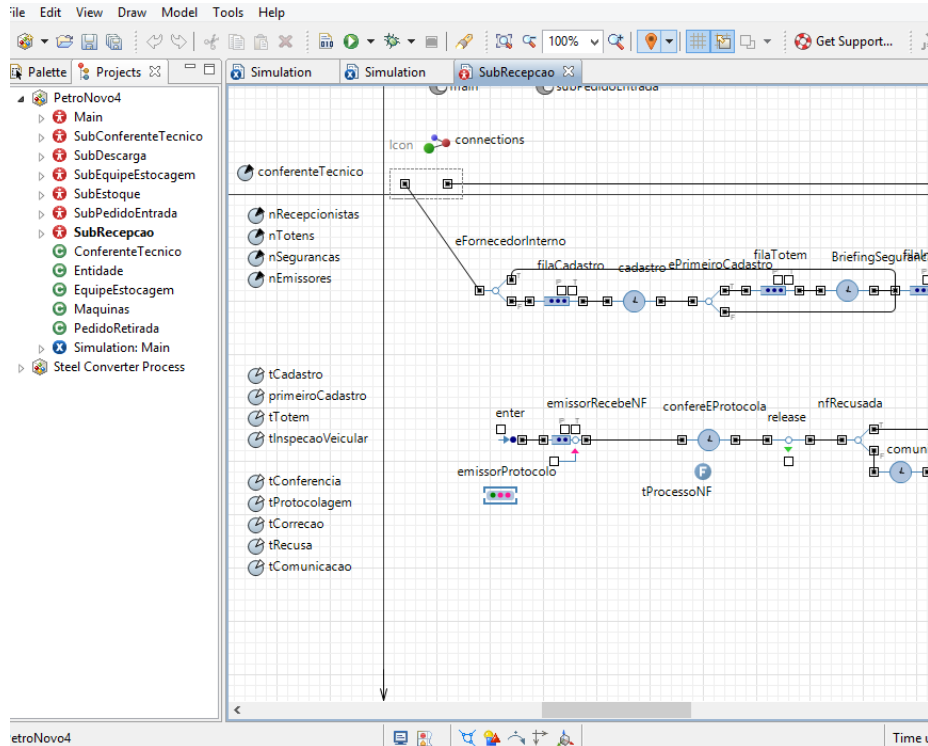
Tempo médio em fila dos navios exportacao - Classe 1	Horas
Tempo médio em fila dos navios exportacao - Classe 2	Horas
Tempo médio em fila dos navios exportacao - Classe 3	Horas
Tempo médio em fila dos navios exportacao - Classe 4	Horas
Tempo médio em fila dos navios exportacao - Classe 5	Horas
Tempo médio em fila dos navios exportacao - Classe 6	Horas

Cases
Other

GENOA 

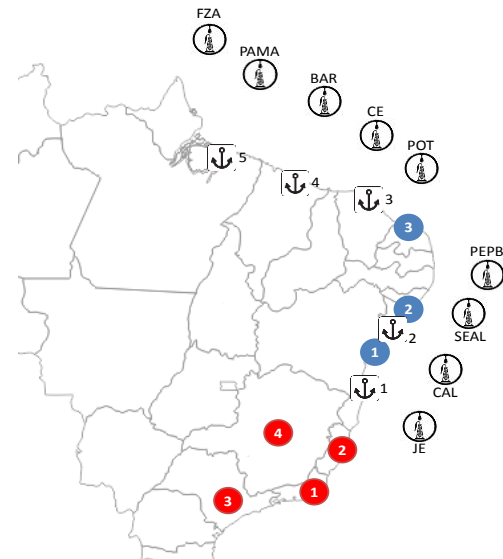
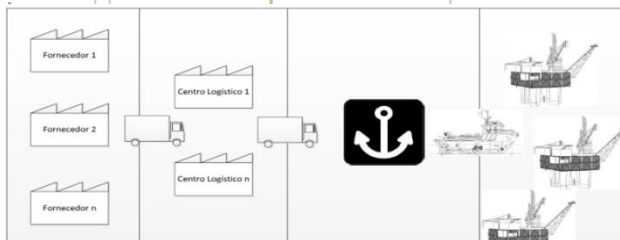
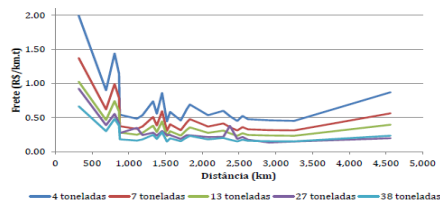
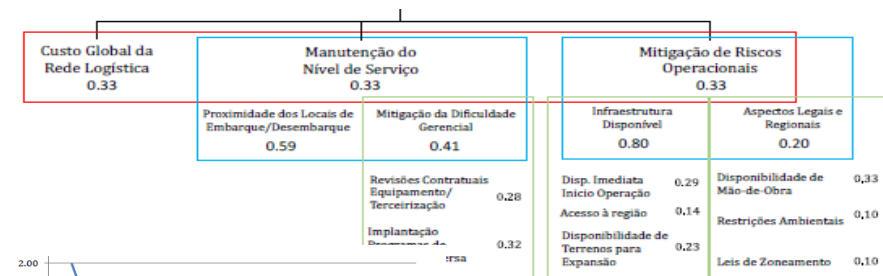
Warehouse Inbound Logistics for Oil Products

- understand, evaluate and optimize the inbound logistic process and internal warehouse logistics processes;



Logistic Warehouse Location Optimization

- determination of the best location of distribution centers in the country, considering logistics and tax costs and qualitative aspects (labor, infrastructure, etc.);
- development of computational optimization model (MIP) and a multi-criteria decision analysis (MCDA) tool;
- result: determination of a more robust decision-making process, with the possibility of costs reduction of 12%.



Função Objetivo

$$\min[ctr(x, y, z) + car(x, y) + cf x(x, r)]$$

$$ctr(x, y, z) = \sum_{i \in I} \sum_{j \in J} \sum_{m \in M} (c_{ij} + ctax_{ijm}) \cdot x_{ijm} + \sum_{j \in J} \sum_{p \in P} \sum_{m \in M} (c_{jp} + ctax_{jpm}) \cdot y_{jpm} + \sum_{p \in P} \sum_{q \in Q} \sum_{m \in M} (c_{pq} + ctax_{pqm}) \cdot z_{pqm}$$

$$car(x, y) = \sum_{i \in I} \sum_{j \in J} \sum_{m \in M} cman_{ijm} \cdot x_{ijm} + \sum_{j \in J} \sum_{p \in P} \sum_{m \in M} cman_{jpm} \cdot y_{jpm}$$

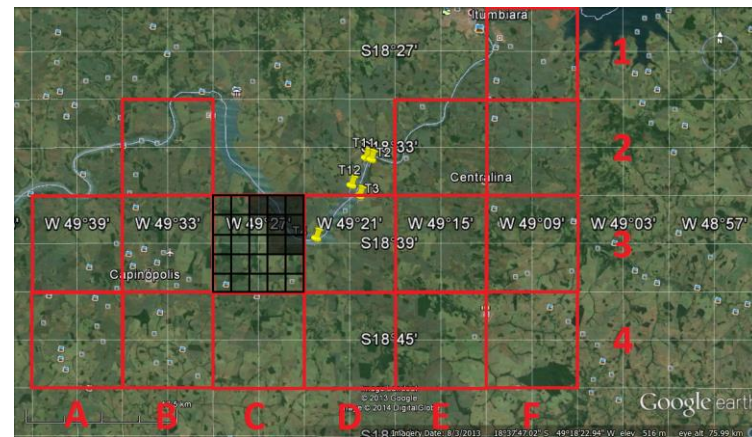
$$cf x(x, r) = \sum_{i \in I} \sum_{j \in J} \sum_{m \in M} [f_{prop_j} \cdot cf ix_j + f_{terc_j} \cdot cloc_j] \cdot [ACob_m + ADes_m] \cdot x_{ijm} + \sum_{j \in J} \sum_{p \in P} ceq_m \cdot y_{jpm}$$

Operation Optimization (CAPEX and OPEX) of Sugarcane Harvesting

- market prospection and viability analysis;
- simulation models to support the development of an economic evaluation model for cost estimation – transportation mode, fleet size and vehicles capacities;
- CAPEX and OPEX optimization X service level

Custo Logístico Operacional Anual		Custos Fixos e Variáveis por Anor		
Transporte Rodoviário	R\$	Frota	Custo	
Transporte Hidroviário	R\$	Custo Rodoviário	19	R\$
Arrendamento	R\$	Custo Hidroviário	2	R\$
Transbordo		Custo Terminais	2	R\$
TOTAL	R\$	TOTAL		R\$
Custo Total	R\$			
Custo rodoviário unitários (R\$/t.km)	R\$			
Custo hidroviário + terminais (R\$/t)	R\$			

Origem	Produção (t)	Área (ha)
C3	35350	
D3	384750	
D4	51300	
E2	436050	
E3	564300	
F2	102600	
F3	25650	---



Logisticss Network Optimization

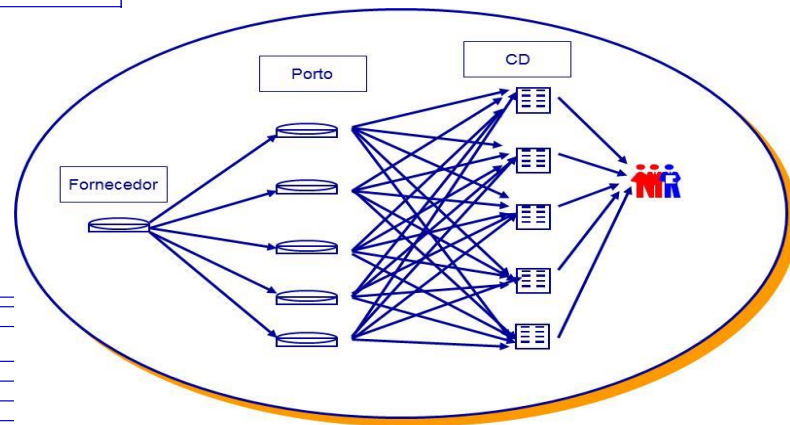
- Projects developed for three main sectors (goods and luxury accessories, electronics, chemical industry), aiming at redefining the flow of materials within the supply chain (suppliers, ports / airports, DCs and retail);
- computational optimization model (MIP);
- results: logistics costs and tax reduction from 10 to 17%. Greater visibility for future operations.

País de exportação	Porto de importação	Centros de distribuição	Mercados	Produto	Custo unitário (R\$)	# unidades	Custo Logístico total (R\$)	Custo tributário total (R\$)	Custo total (R\$)
China	Itajaí	RS	RS	Produto A	2.55	300,000			
China	Itajaí	SC	SC	Produto A	2.47	240,000			
China	Itajaí	PR	PR	Produto A	2.52	360,000			
China	Santos	SP	SP	Produto A	2.44	600,000			



Produto A	2.47	450,000
Produto A	2.57	300,000
Produto A	3.51	450,000
Produto A	2.56	150,000
Produto A	3.29	150,000

Total Real Cost (R\$)
Total Real Logistic Cost (R\$)
Total Real Tax Cost (R\$)
Avg Cost Per Unit (R\$)
Stdev Cost per Unit (R\$)



Talk to us to know about these and other cases.

Thanks !

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