

Game Theoretic Real Option Approach of the Procurement of DOD: Competition or Collaboration

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Structure

- Introduction
 - Origin
 - Problems
- Intelligence Base
- Strategic Interaction
 - Interdisciplinary forum
 - Option games
- MOD: compete or collaborate
- Way ahead
- Conclusions
- Q&A

Introduction

Origin

- IT Medical Service: flexible
- ACOS Eval (2002-2007)
 - New structure, so new management tools,
 - BSC, CAF, Harmonization plans, ..
 - but culture ...
- Last of the Mohicans
 - Expertise gone
 - Phoenix
 - Outside Defense => Federal

Phoenix

- From strategy to Service
 - Skeleton
 - Generic
 - Logical sequence
- Domain of IT
- Investment
 - EAI, SOA
 - Cloud Computing

Problems

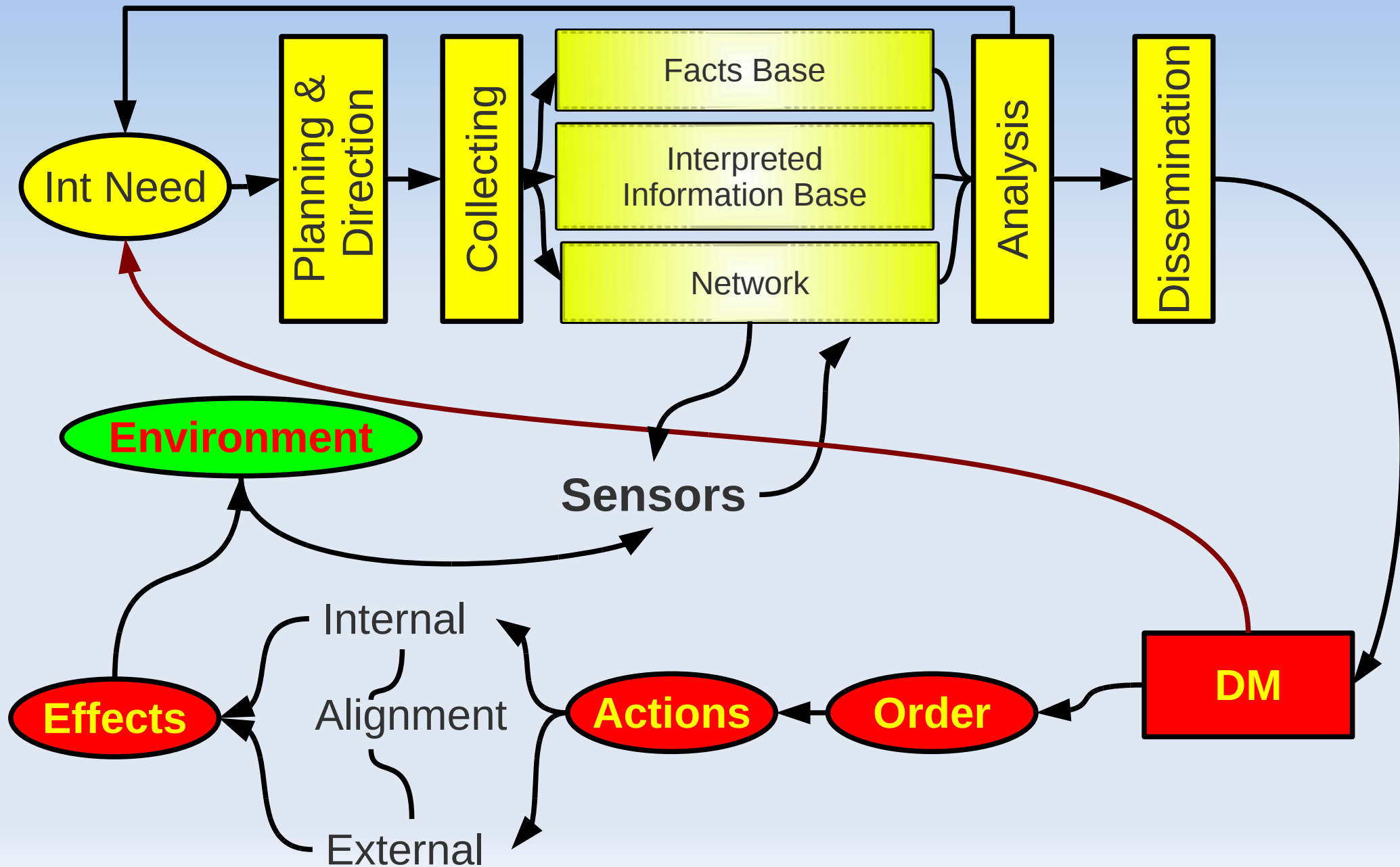
- Real option is the right, but not the obligation, to undertake some business decision
- Weeds (2006):
 - Complex mathematics
 - Constantly seeking for information
 - Is this not normal?
- Ferreira et al. (2009):
 - Lack of strategic interaction
 - Option games

Intelligence Base

Intelligence base

- NATO IST-055 Specialist Meeting. The Hague, Netherlands, 2005
- Generic process
 - ACOS Evaluation – Belgian MOD
- Facts stay, Intelligence changes
 - Facts Base
 - Knowledge Base
 - Network of sensors
 - Management of the unknown

Intelligence Base



Intelligence

- DOD/MOD: business as usual
- Implementation: cultural bound
- DOD: Knowledge-as-a-Service (KaaS)
 - Cloud Computing, Knowledge, Pre-analyzed content
- Data-as-a-Service (DaaS):
 - Dun and Bradstreet, Equifax,
- Internal: CAF

Intelligence for ...

- Everybody (Open → Closing)
- Context
- Lessons learned
- Workforce
 - Transparency
 - Incentive: win/win or avoid to be beaten up
 - Culture !!!!!

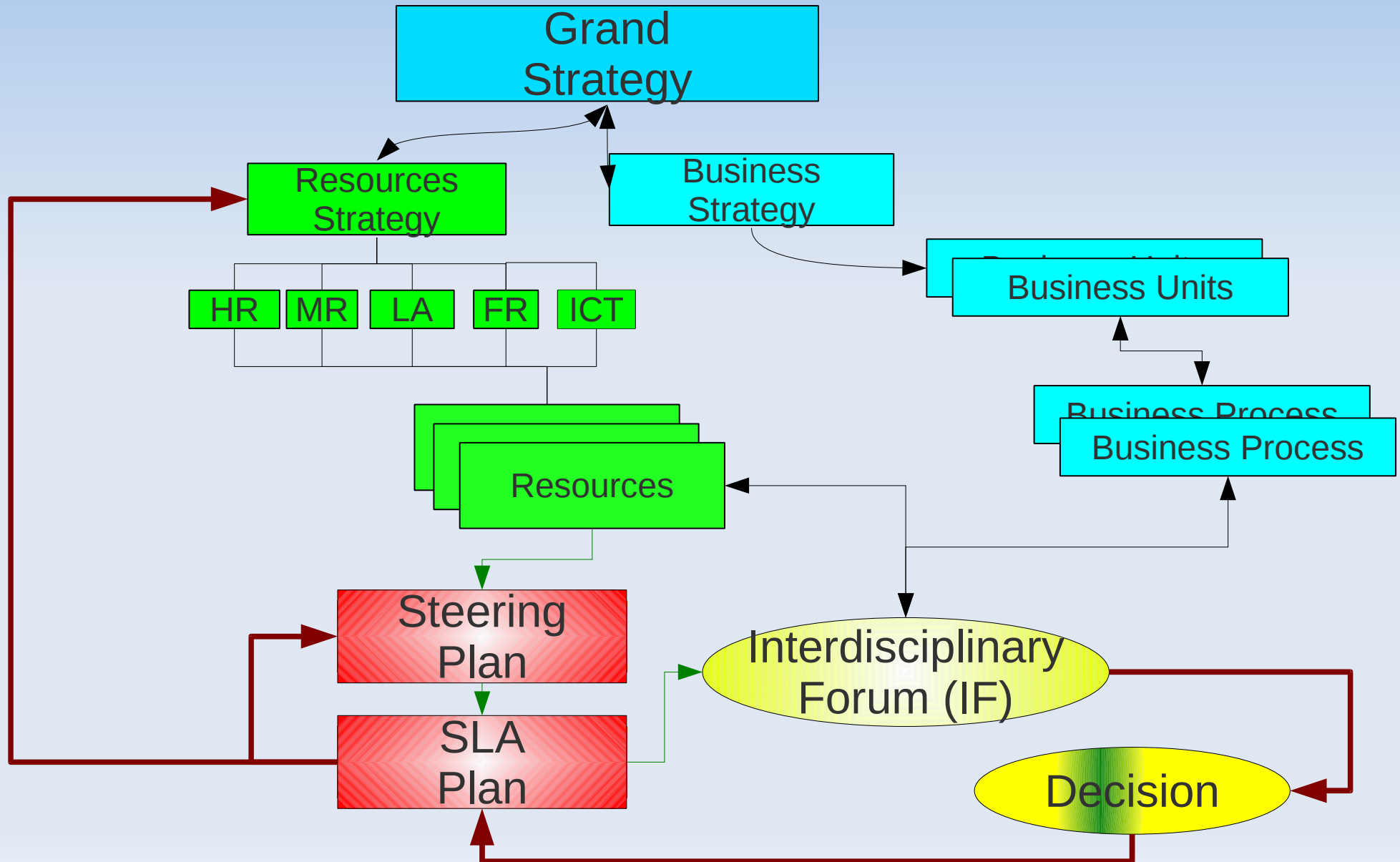
Strategic Interaction

Interdisciplinary Forum

Strategy

- Grand Strategy
 - the art of combining all resources of an organization or alliance into a dynamic adaptable plan to achieve its (political) goals
 - Balance Goals/Mean
- Derived from GS:
 - Business Strategy (goals in Environment)
 - Resources Strategy (means)

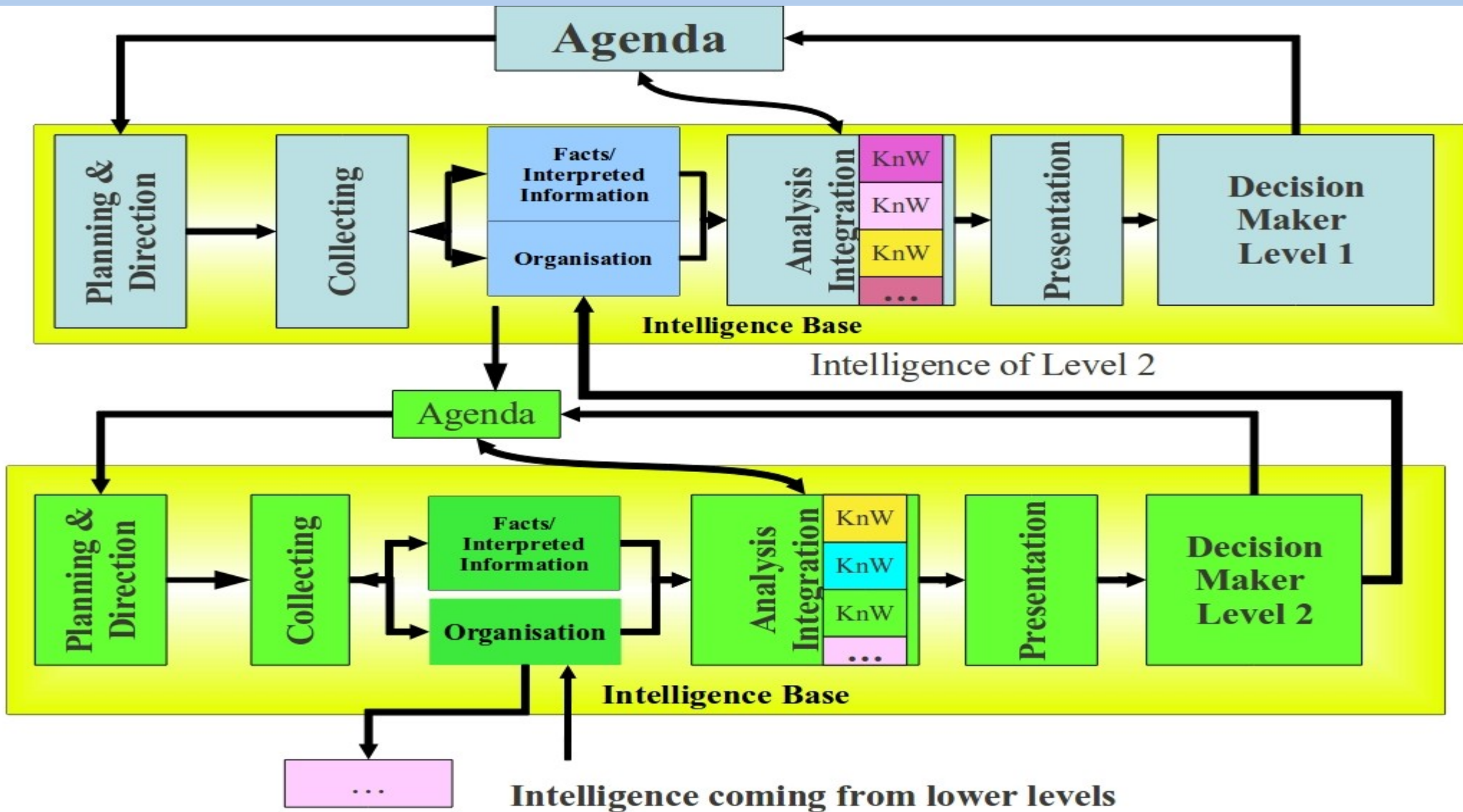
Interdisciplinary Forum



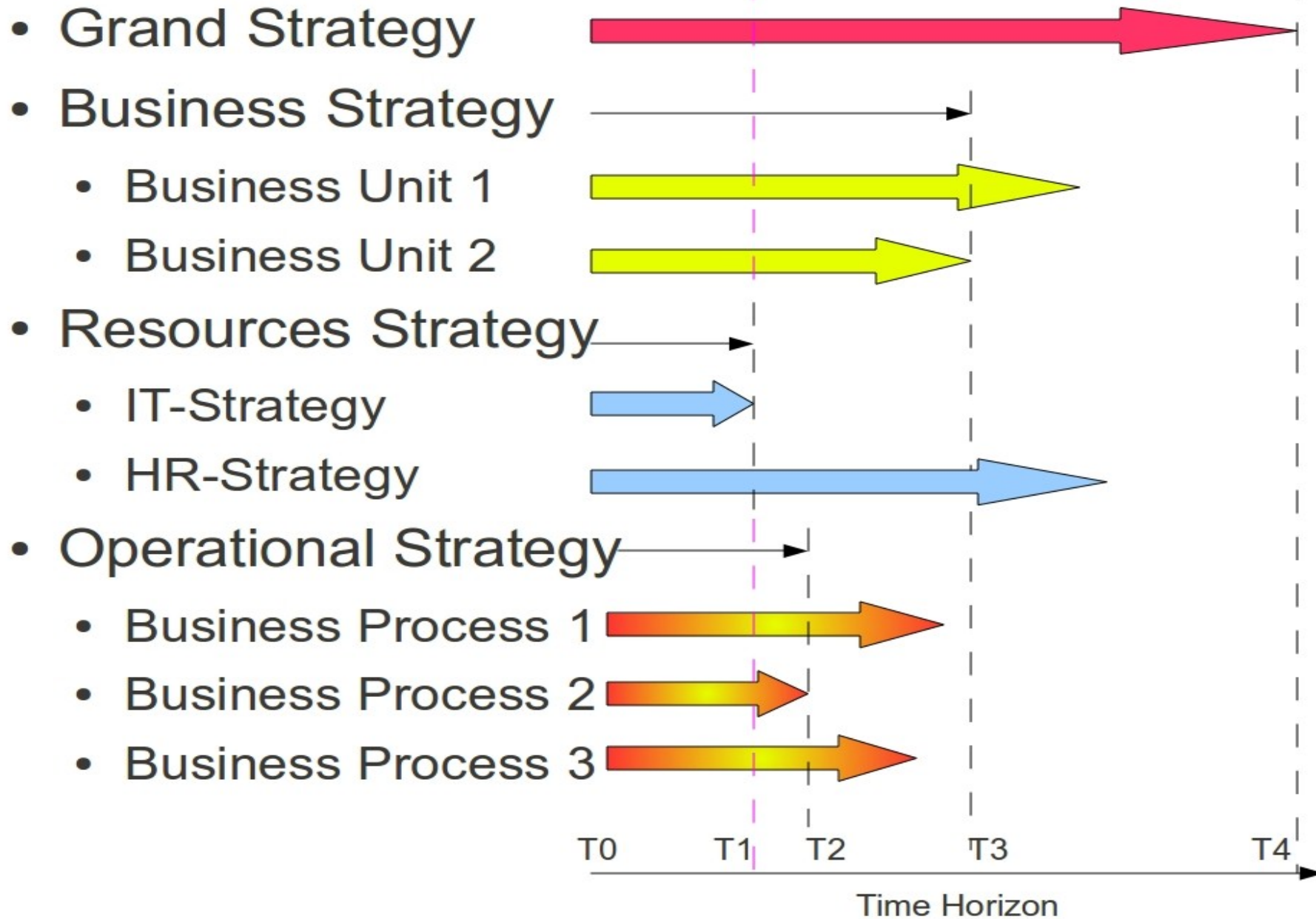
IF for ...

- Business and Resources
 - Bringing User and Material Managers, therefore procurement, together
 - Business-driven
- INTER => all, not some
- Enabler transparency => sharing data, knowledge
- Cutting Budget => interdependency

Cascading Intelligence



Time Horizon



Strategic Interaction

Option games

Game Theory

- game theory models strategic situations, or games, in which an individual's success in making choices depends on the choices of others.
- First competition
- Later also collaboration
- Payoff matrix

Representation of a game

Strategy set for Player 1

Player 2

Strategy set for Player 2

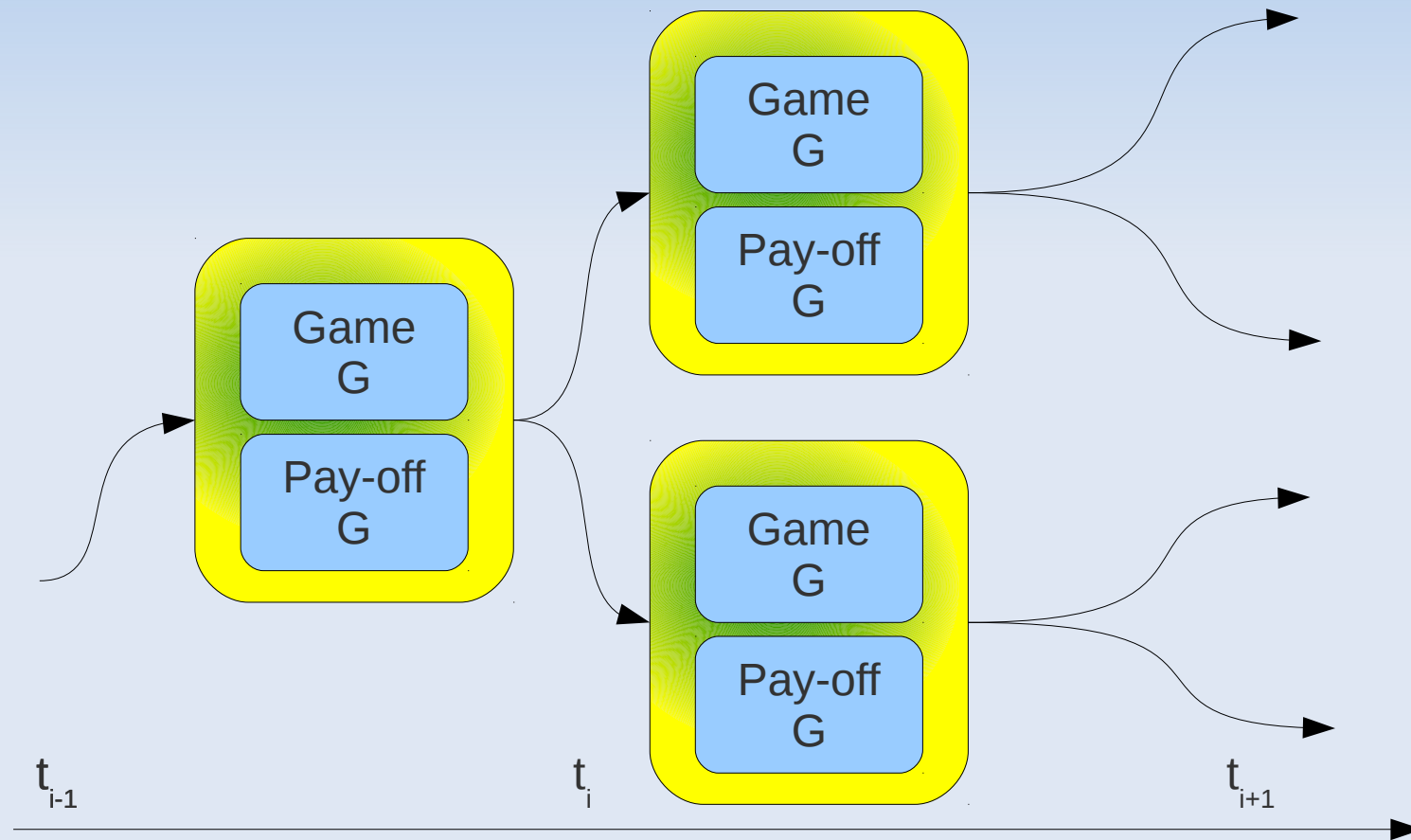
		Player 2		
		A	B	C
Player 1	A	(2, 2)	(0, 0)	(-2, -1)
	B	(-5, 1)	(3, 4)	(3, -1)

Payoff to Player 1

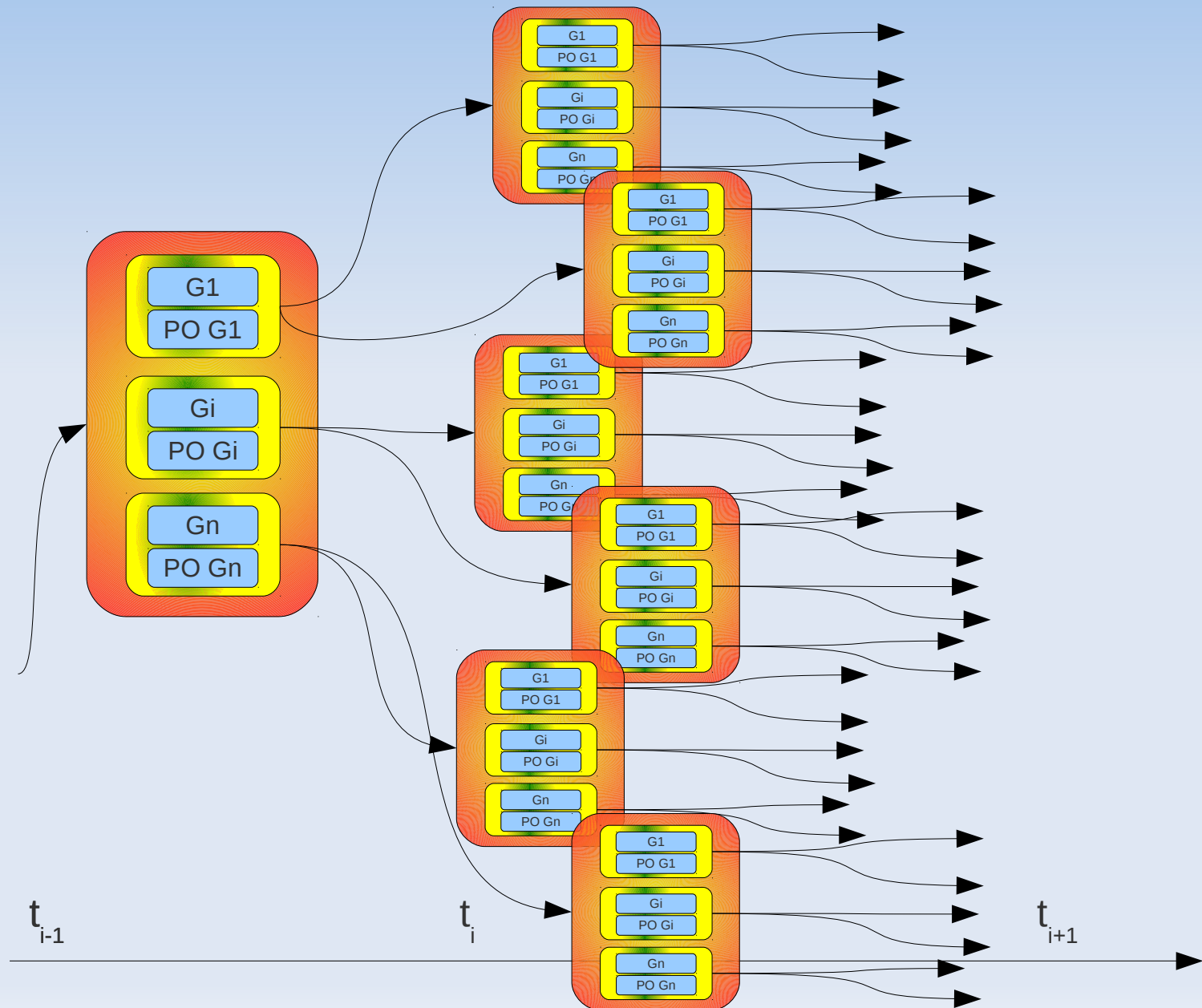
Payoff to Player 2

- Doves, hawks
- Symmetric info?

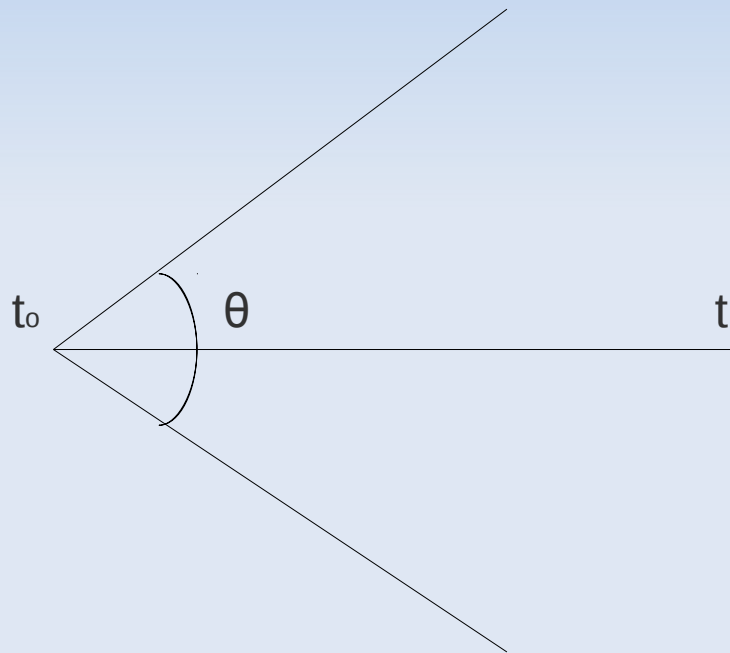
Mono-game chain of real options



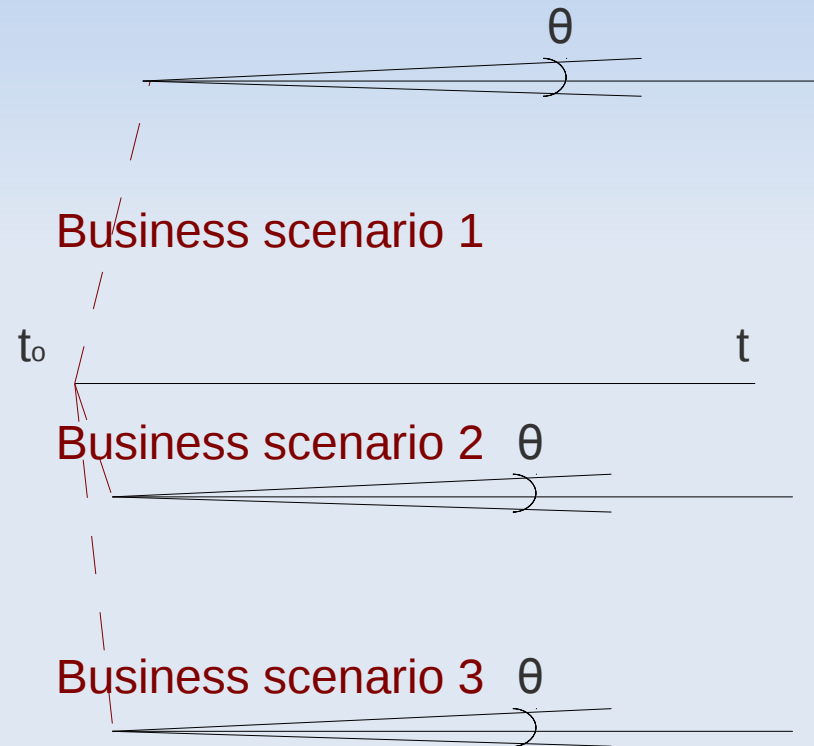
Multi-game chain of real options



Which level is the game?



Θ = volatility



Split over
scenario's

MOD:
compete or collaborate?

First or second Mover?

- First Mover
 - Enforce standardization
 - Suits best its policy
 - Unproven strategy → Risk, uncertainty
- Second Mover
 - Wait-and-see (lessons learned Leader)
 - Market efficiency
 - Possibility of sacrificing objectives
- Now-or-Never
 - Immediate (re)action

Collaboration

- If you can't beat them, join them
- Political will
 - Standardization in Alliance
 - Same domain (Military)
 - Same country (Other Government Agencies)
 - Hybrid (non-governmental, commercial)
- Game theory
 - non-zero sum games

Regulator

- creating the game theory framework in which the suppliers will interact with each other
 - Competition only
 - Competition followed by collaboration
 - Collaborate
- Utopia

Way ahead

Issues

- Changing legislation
 - Belgian
 - European Union
 - Open Source
 - Cloud Computing
- Complexity
 - Not one magic rule, method
 - Fuzzy ROV
- KVA (NPS) => FPS P&O, Prime Minister

Conclusions

Conclusions

- Generic (skeleton, hallstand)
- Option games
 - ROV
 - Intelligence base
- Interdisciplinary Forum
 - On which level are we “playing”? → acquisition
 - Strategic interaction
 - Collaboration, Competition
 - Regulator
- Still issues



Coordinates

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