

An electronic market-place centralising exchanges in the virtual enterprise

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Context

Context



Enterprise 1



Enterprise 2



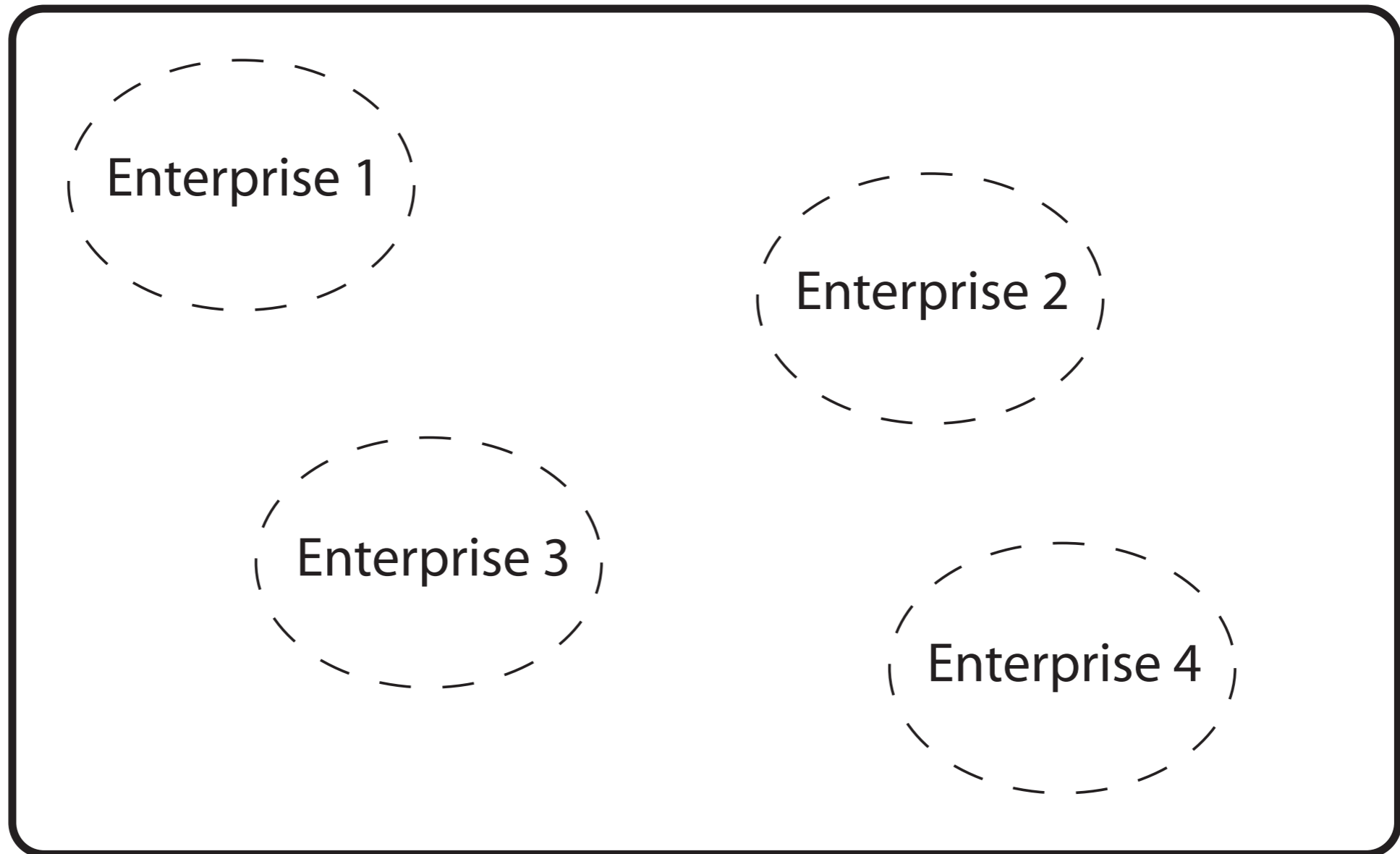
Enterprise 3



Enterprise 4

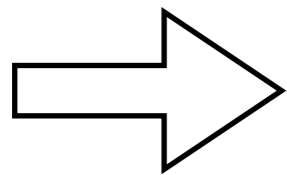
Context

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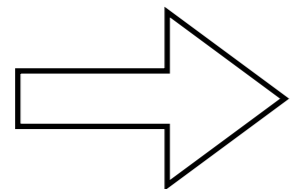
- to set effective collaborations : not obvious
- more than a simple processes “exposition” between partners
- mutual resource integration for a common gain



Global consistency need in the virtual enterprise

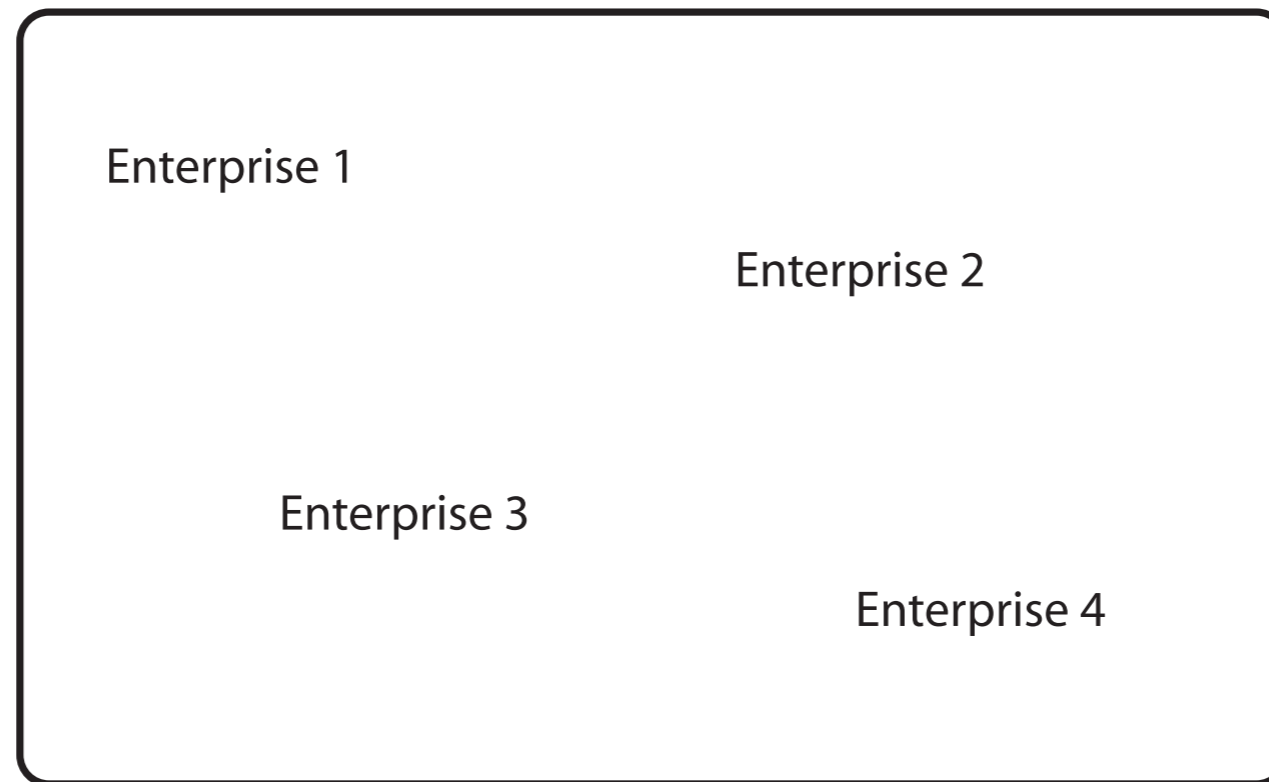
Context

- global consistency: processes harmonisation and normalisation between ISs and inside ISs.

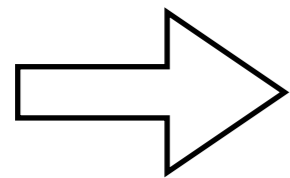


Prerequisite: to enable ISs interoperability

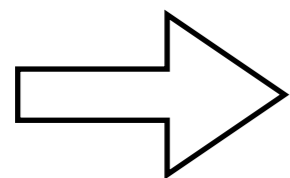
Context



"perfect" interoperable IS



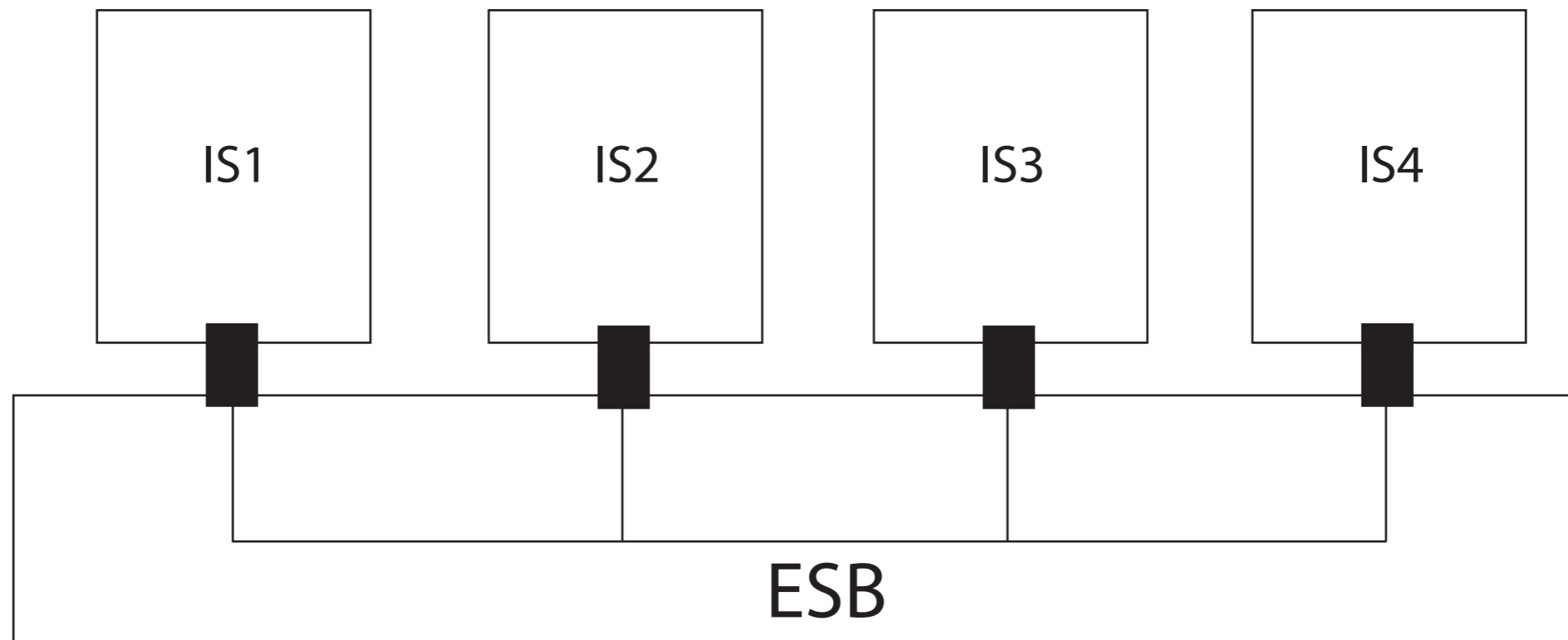
integration attempts: EAI, ERP



**major issues : confidentiality, data consistency
between entities (syntactical, semantic),
consistency between processes...**

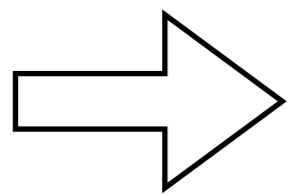
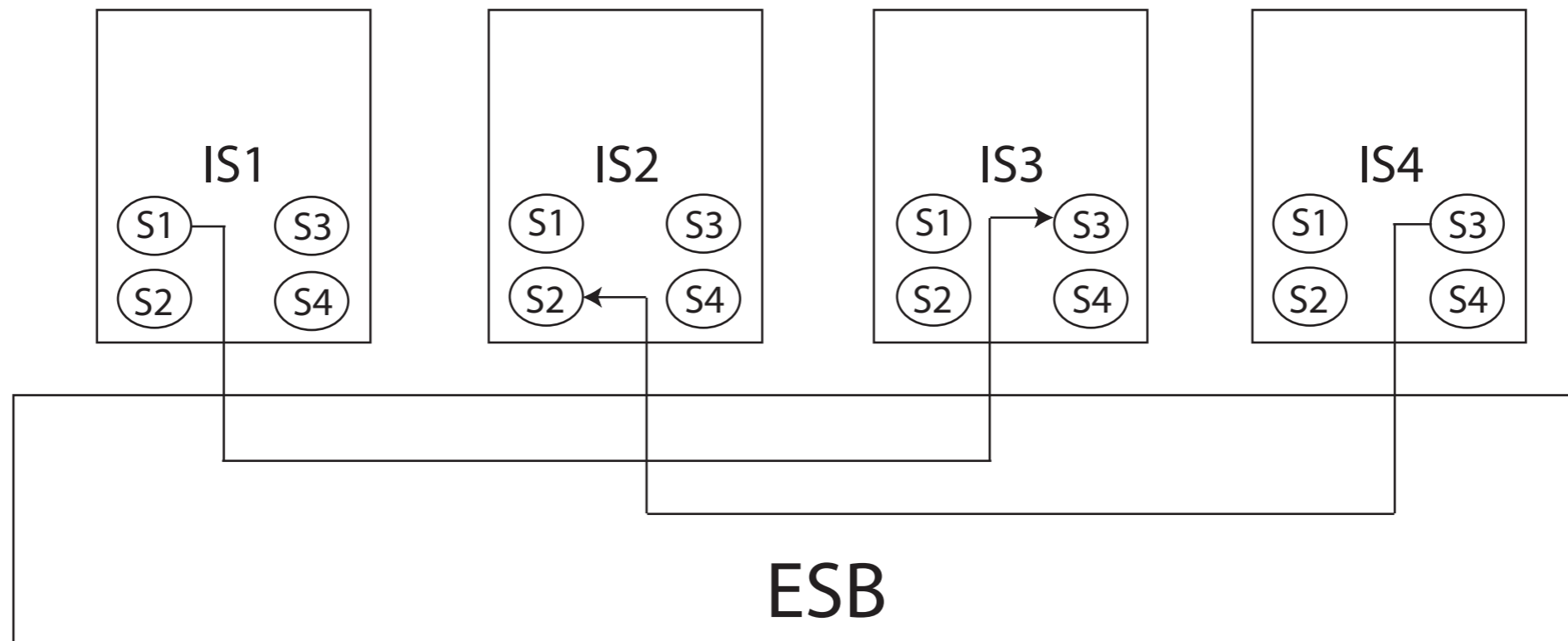
An interesting approach : SOA

need for interoperability, flexibility, diversity ...



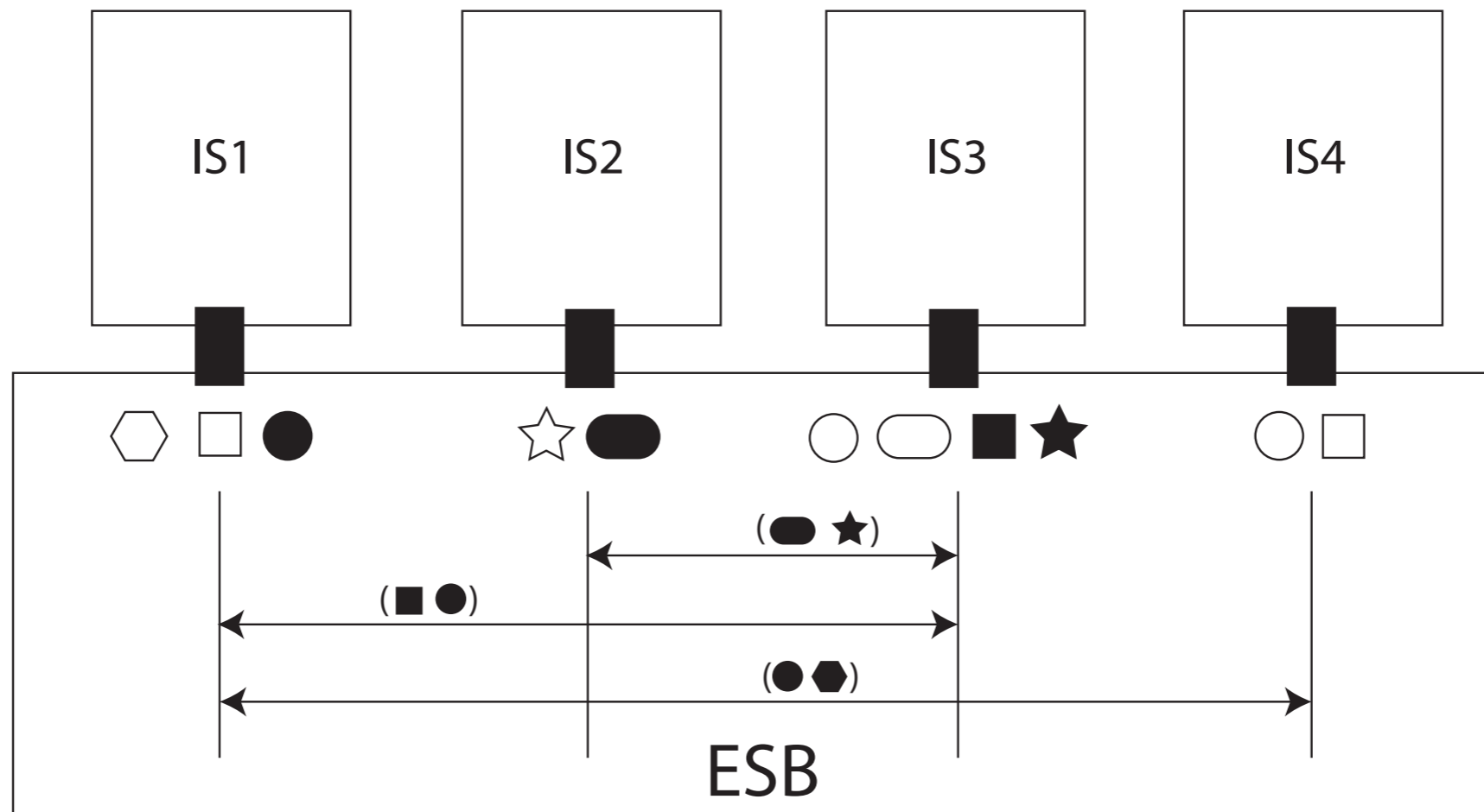
■ : connectors
— : information exchange

An interesting approach : SOA



the “need” : powering the service invocation

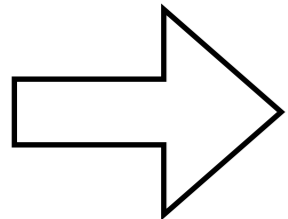
Regulation obtained thanks to the supply-demand paradigm



- ○ ○ ○ ○ : demand
- ● ● ● ● : supply
- ↔ : exchange

What's new ?

- nothing .. but



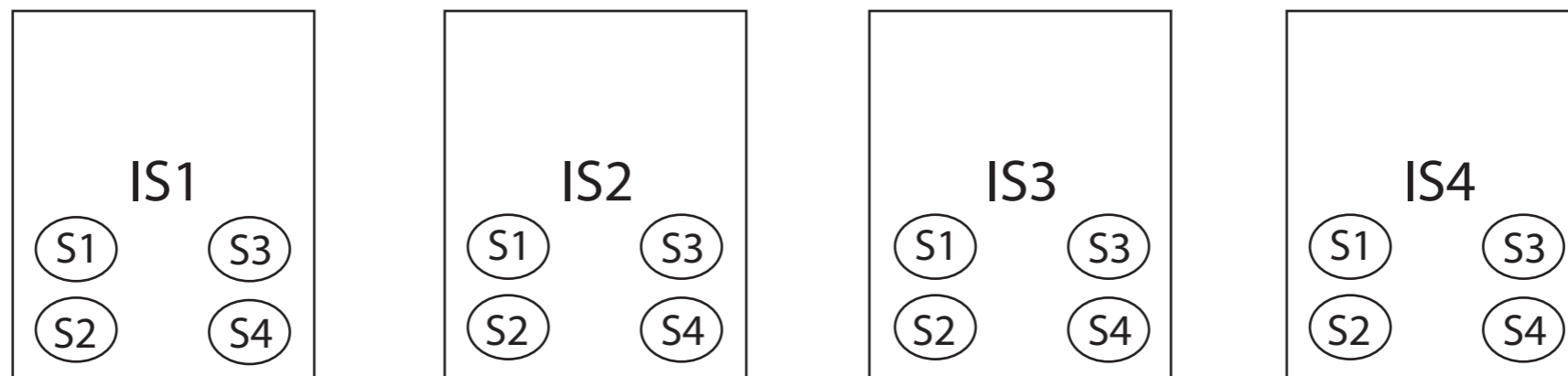
The online services availability is a
revolution : virtual market-place concept

Reactivity to the market : pros and cons

inside the supply-network ...

Reactivity to the market : pros and cons

inside the supply-network ...



ESB

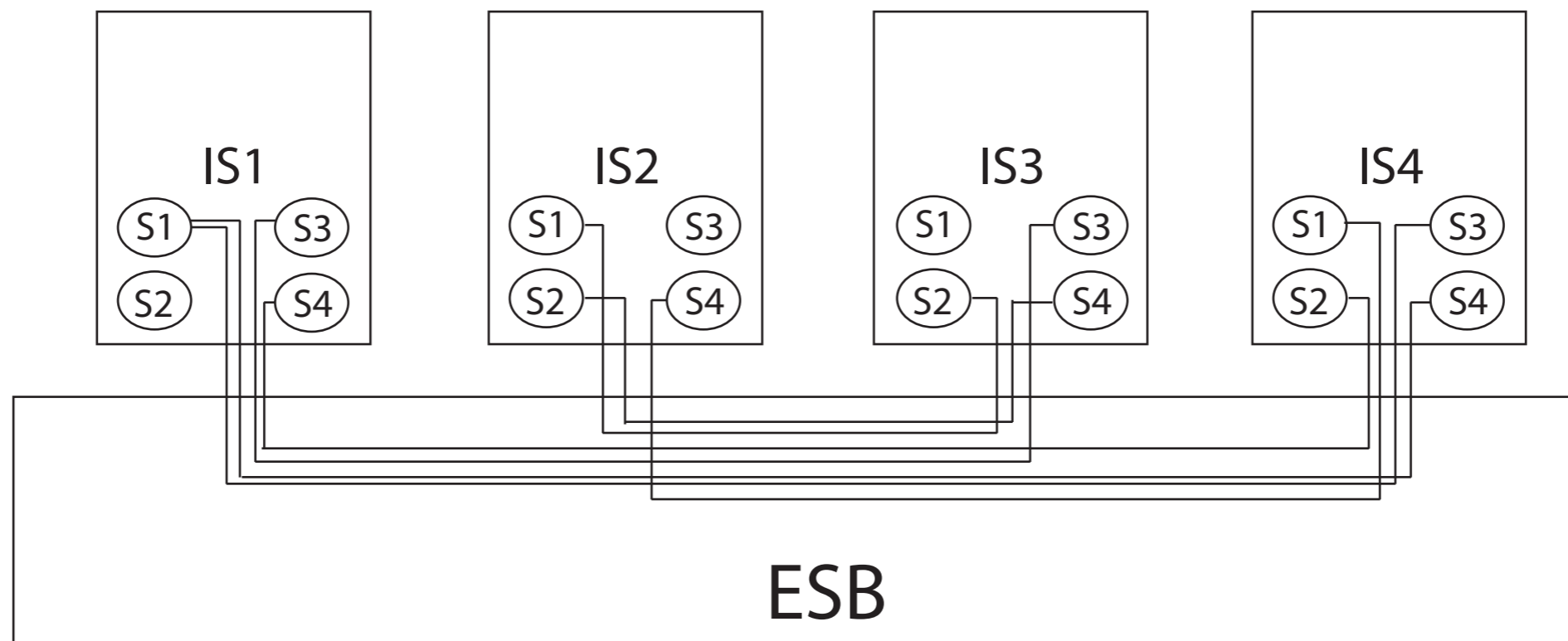
t snapshot

Reactivity to the market : pros and cons

inside the supply-network ...

Reactivity to the market : pros and cons

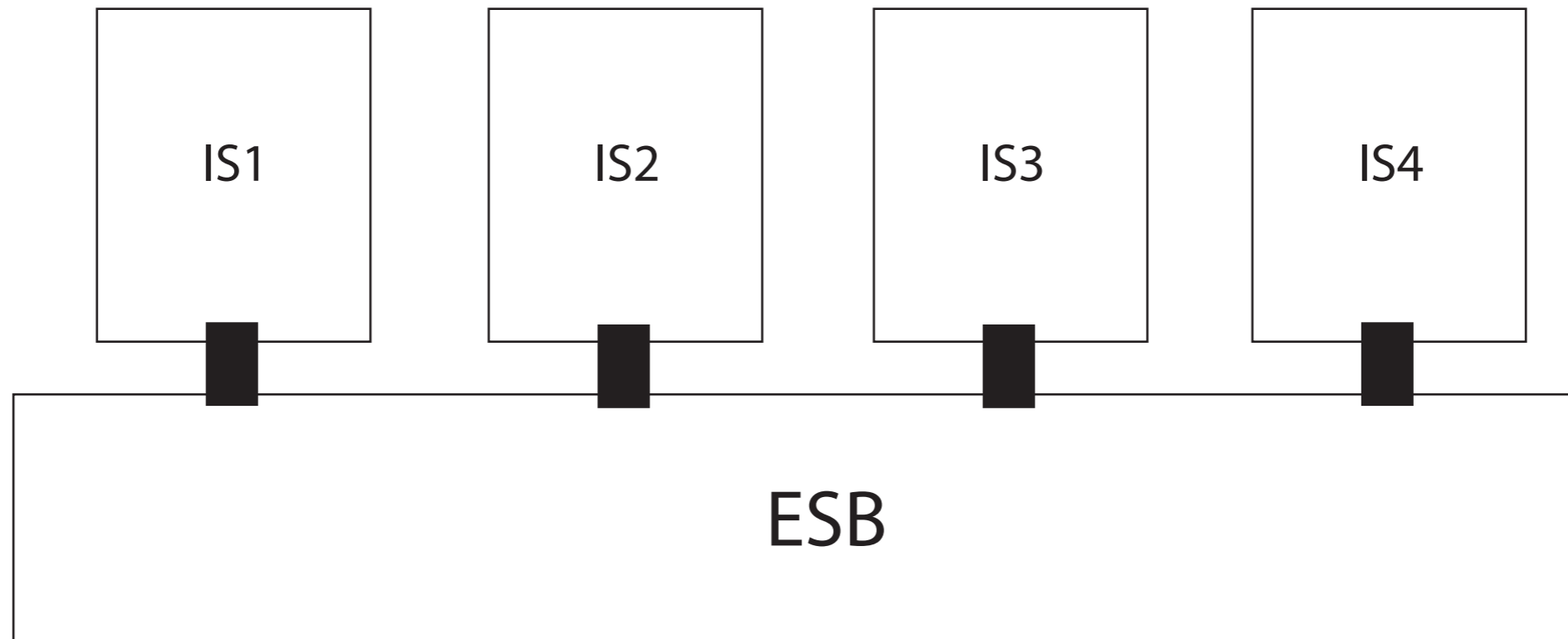
inside the supply-network ...



$t+1$ snapshot

Reactivity to the market : pros and cons

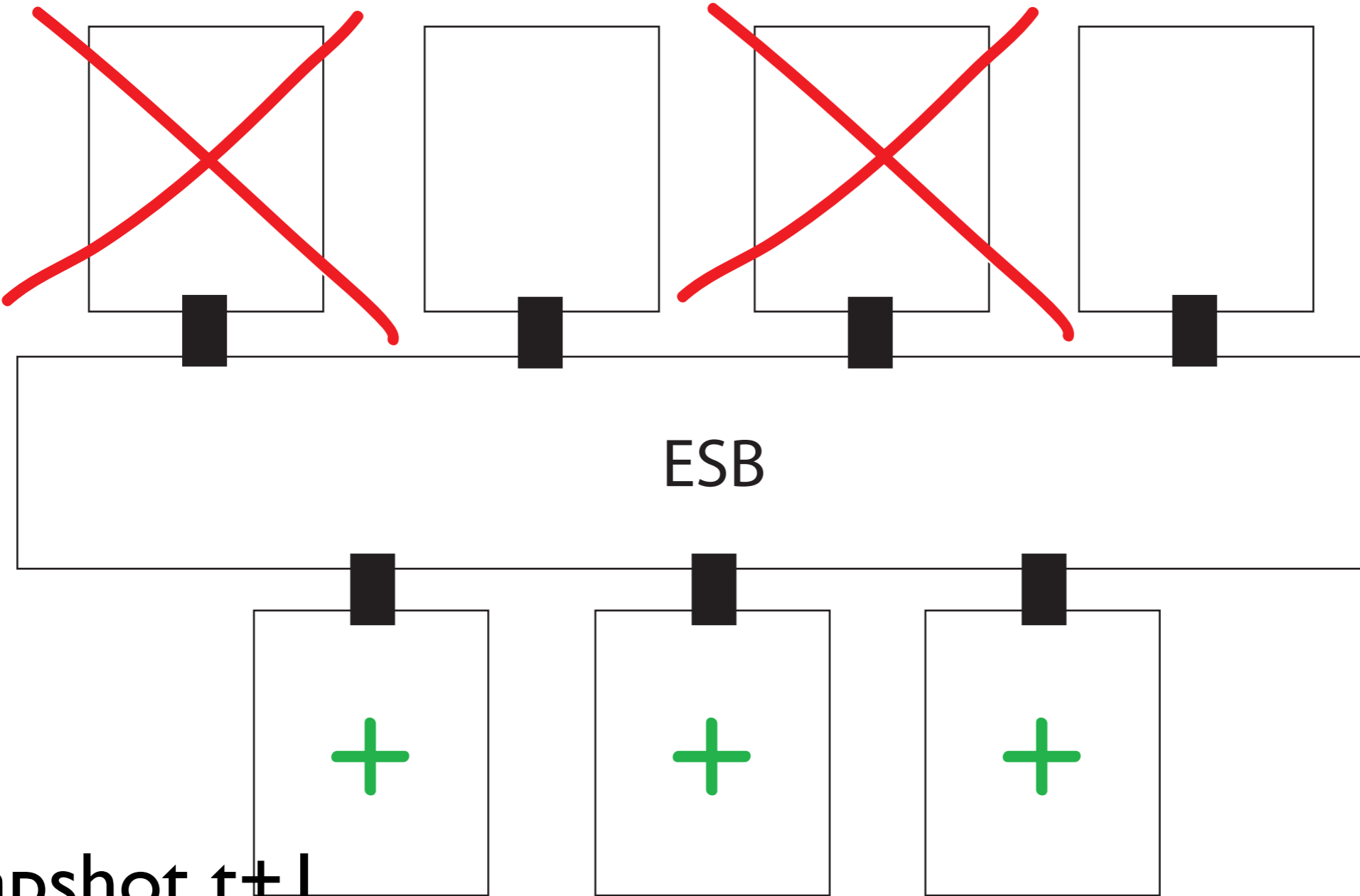
Reactivity to the market : pros and cons



snapshot t

Reactivity to the market : pros and cons

Reactivity to the market : pros and cons



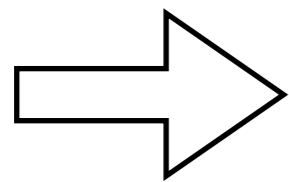
snapshot t+1

Reactivity to the market : pros and cons

- In a context of a market-place existing without regulation :
 - hard to maintain a good consistency within the supply network
 - difficult to protect the network from “predators”

The exchanges regulation : a requirement

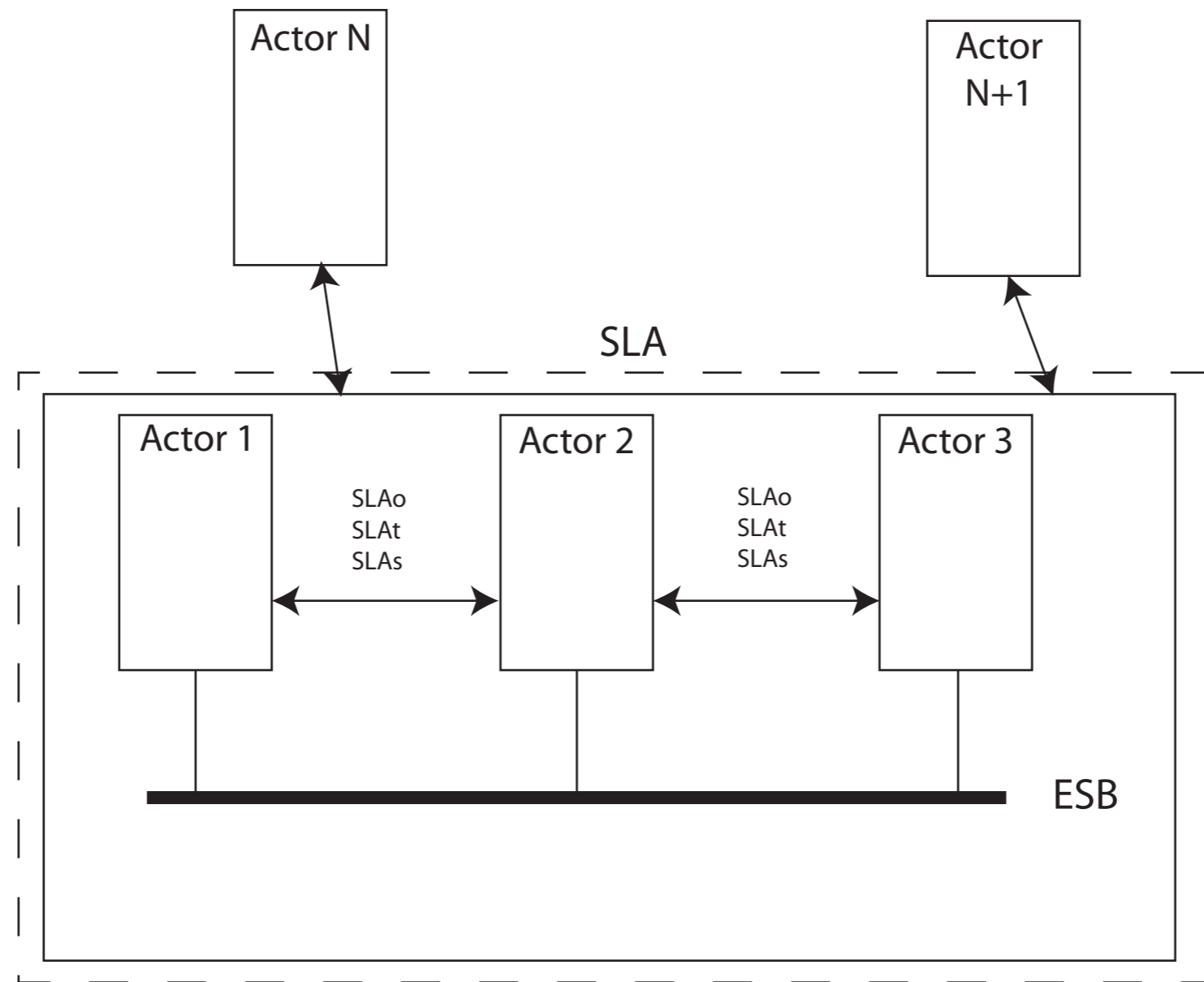
- regulation inside the network
- regulation between the network and the “external world”



SLA definition

relevant criterion definition to build SLAs

The exchanges regulation : a requirement



SLAo : operational contracts
SLAt : tactical contracts
SLAt : strategical contracts

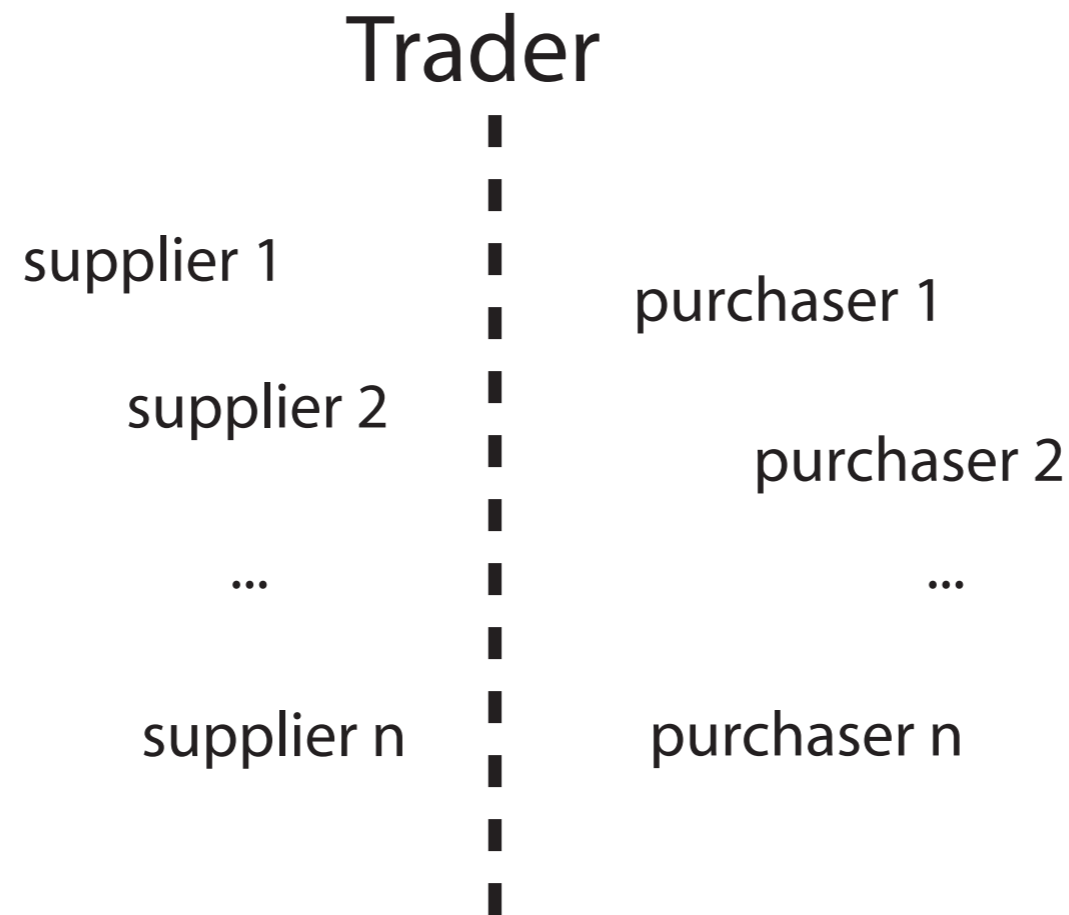
↔ : exchanges
- - - : SLA for entering/exiting the VE
□ : virtual enterprise

The exchanges regulation : a requirement

- yes ... but
- the definition of contracts at the interfaces is important, but this should not damage the VE flexibility

Exchange model between actors

The trader based model



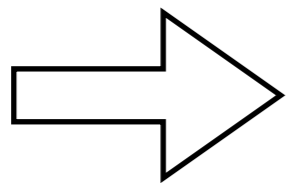
central authority : how to be sure of his integrity and impartiality ?

the trader model centralises the exchanges, which is much less interesting than the ESB model (decentralised)

Exchange model between actors

Model based on the auction mechanism

- respects the decentralised aspect of the ESB
- each actor is fully involved (a transaction is not a bunch of orders given to the trader) (purchaser and supplier)
- each part is evaluated by the other one



interesting, but yet not perfect ...

Conclusion

- SOA : an important step toward IS interoperability, even if a lot has to be done
- the electronic market-place concept : a good point, but needs to be regulated
- the auction mechanisms seems interesting to correlate the offer and the demand, in the more decentralised possible way.

 perspectives :

work on relevant indicators to define SLAs between actors,
evaluate the network reactivity to define the temporal threshold
to enter or exit the network without jeopardizing it.