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Training

ODP Viewpoints (Intro to ANSA)

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Abstract

The business problem addressed is...

The technical problem created by that business problem is ...

The solution being offered is....

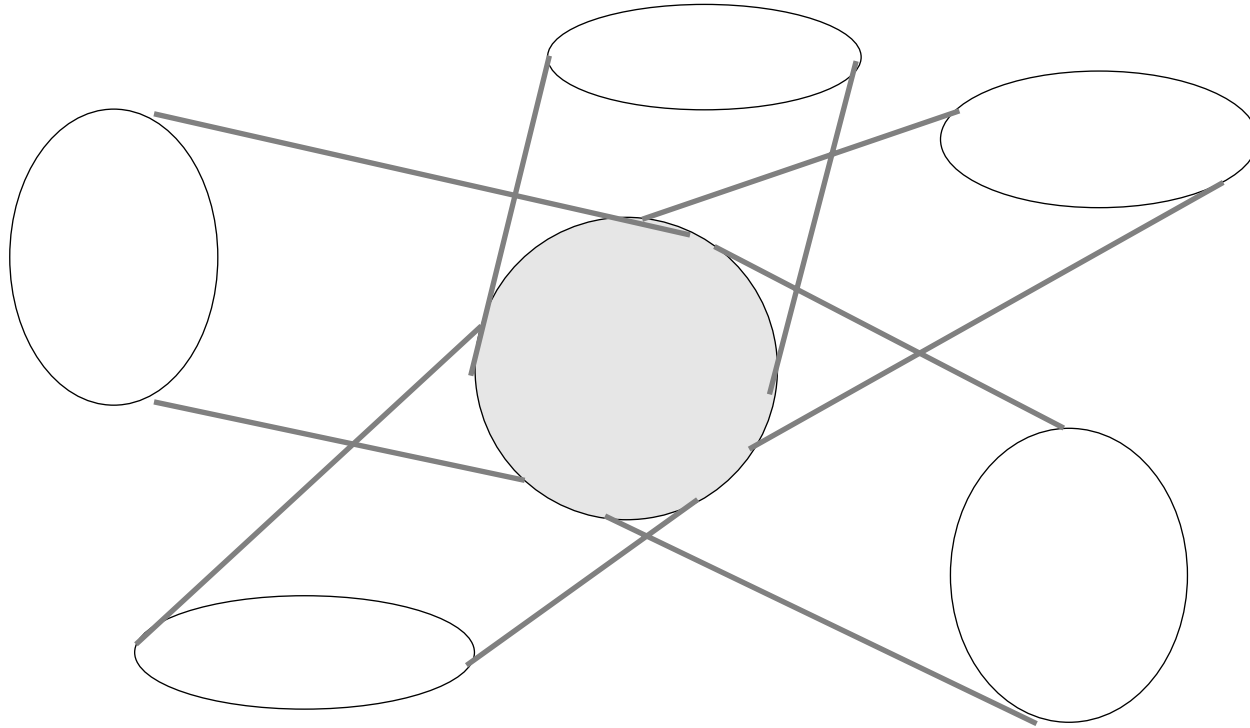
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Briefing Note

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Distribution:
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ODP Viewpoints





In this session

- *Explain what the viewpoints are*
- *Show how separating the viewpoints of a system help you build open distributed systems*

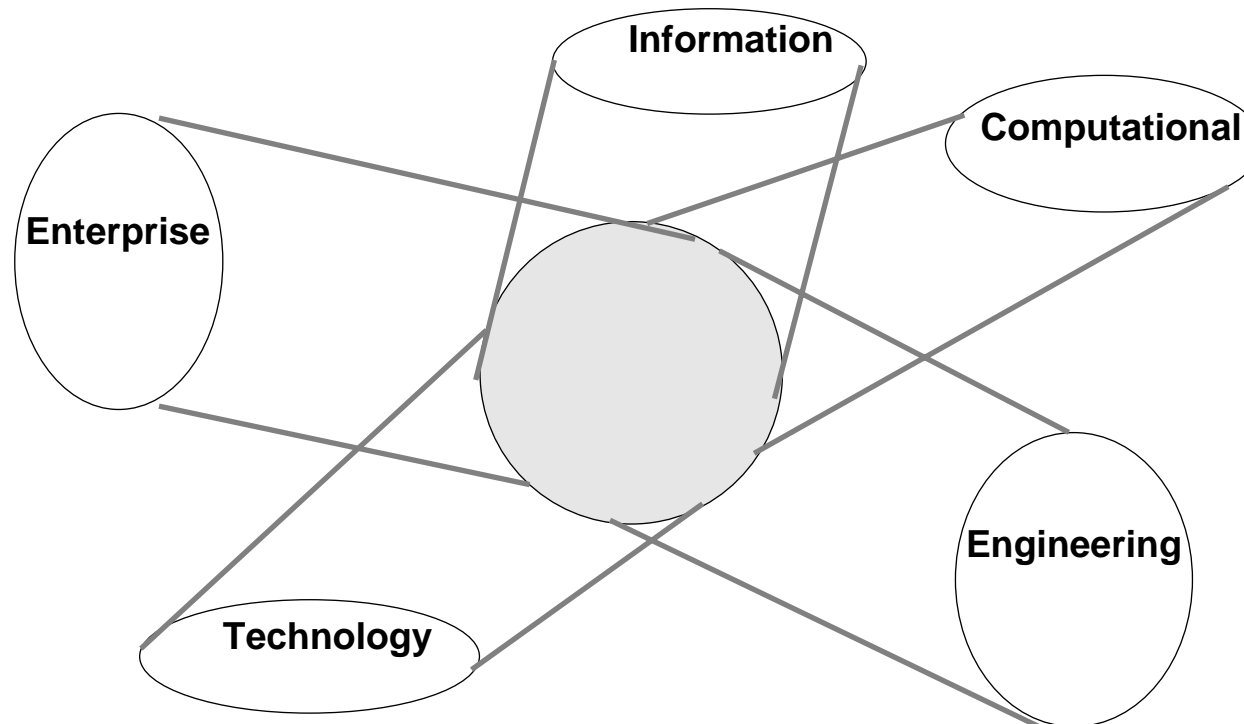


Distributed Systems have many aspects

- *Distributed systems involve many different people (the stakeholders)*
 - business managers, users, IT managers, IT developers,...
- *These people are concerned with different aspects of the system*
 - they see the system from a different viewpoint
 - each viewpoint is important
- *We need to be able to separate out these concerns when describing distributed systems*
 - so that each stakeholder can see that their needs are satisfied...
 - ... without being overwhelmed by descriptions of aspects that are irrelevant to them

Five different viewpoints

- *These are of the same system and are not layered*

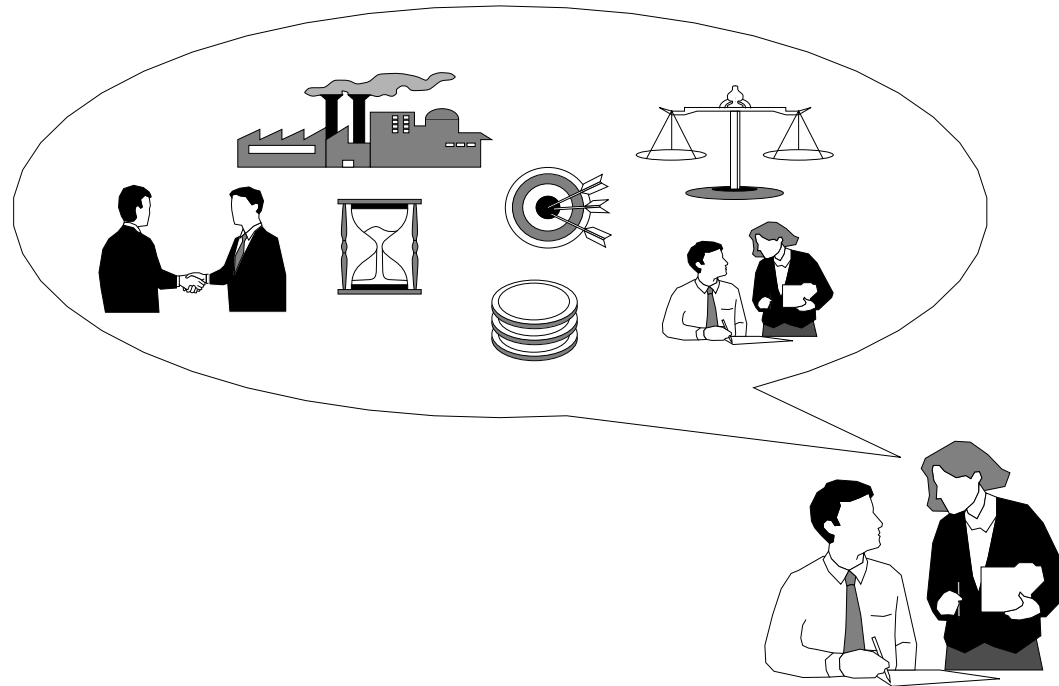




Content of the five viewpoints

- ***Enterprise*** - the *purpose* of the enterprise and the system within it
- ***Information*** - the *meaning* of the information within the enterprise
- ***Computational*** - the *execution* as a model of distributed processing
- ***Engineering*** - the *mechanism* for realising the computational model
- ***Technology*** - the *conformance* of hardware, operating systems, compilers,...

The Enterprise viewpoint



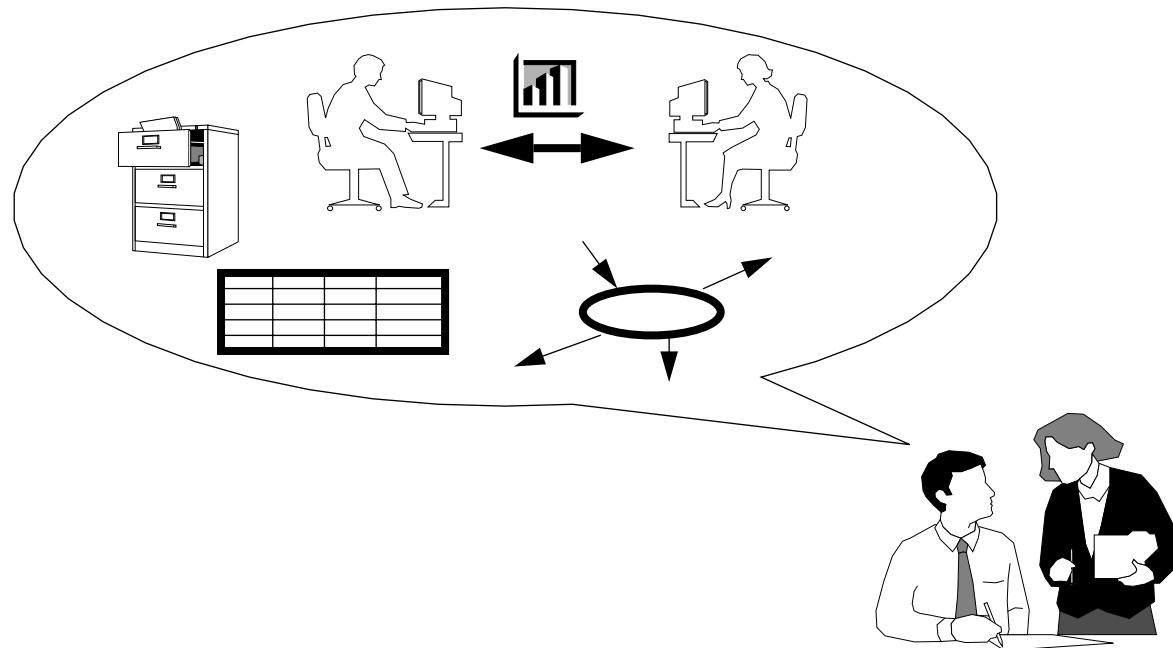
- *Describes agreements, targets, people, time, money,...*



About the Enterprise viewpoint

- *More specifically, the Enterprise viewpoint is concerned with*
 - roles of people, organizations, and systems
 - rights, responsibilities, and obligations
 - resources

The Information viewpoint



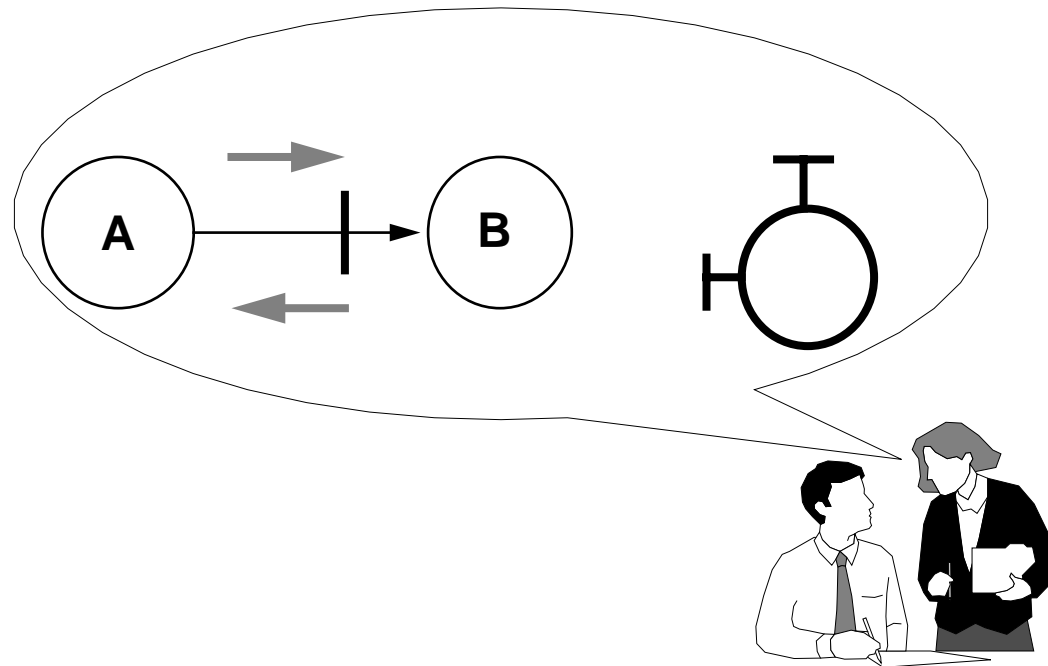
- *Describes information flows, information stores, information users,...*



About the information viewpoint

- *The information viewpoint describes objects*
 - not interfaces
- *This is familiar territory for the business analyst or database specialist...*
 - ...schemas, entities,...

The Computational viewpoint



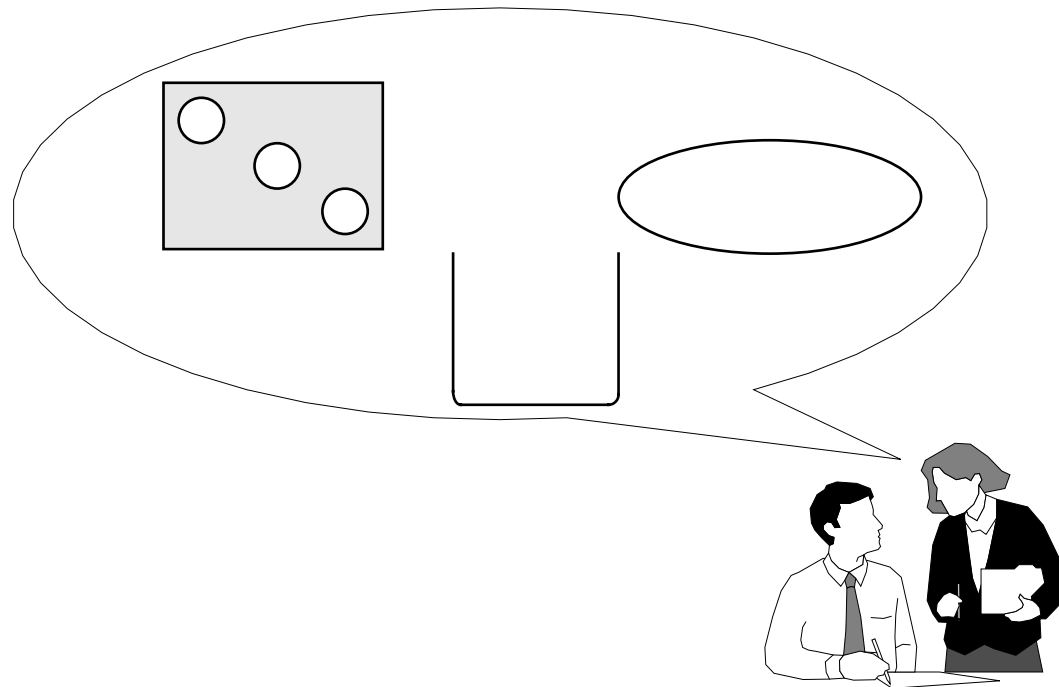
- *Describes objects, interfaces, operations,...*



About the Computational viewpoint

- *The distribution of a distributed system is ignored by the Computational viewpoint*
 - it is transparent to the Computational viewpoint
- *From the Computational viewpoint*
 - resources are always available when needed
 - communication between objects is transparent

The Engineering viewpoint



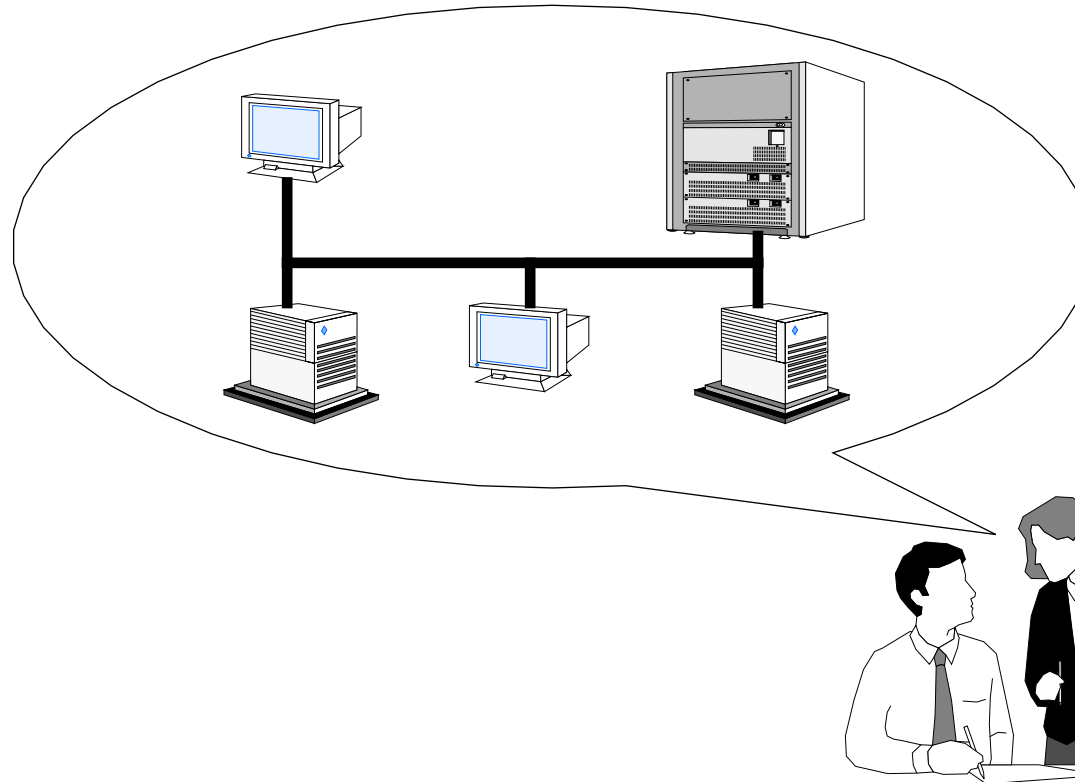
- *Describes clusters, nodes, channels,...*



About the Engineering viewpoint

- *The Engineering viewpoint describes the infrastructure for the Computational viewpoint*
- *The infrastructure deals with*
 - communication channels between objects
 - resource management
- *It provides transparency mechanisms that hide the distribution from the Computational viewpoint*

The Technology viewpoint



- *Describes how the system design uses the actual technology*



About the Technology viewpoint

- *The Technology viewpoint is mainly concerned with conformance to standards of actual hardware and software*
- *There are few rules in the Technology viewpoint*
 - rules will be implementation-dependent



Interoperability in the five viewpoints

- *Successful interoperability requires all the viewpoints to work together*
 - a mismatch in any one can prevent interoperation
- *The aim is detect and resolve this mismatch at specification time*
 - one day there will be software tools to do this automatically



Technology mismatch

- *Two departments wish to interconnect their LANs*
 - one uses Ethernet...
 - ...the other uses Token Ring



Engineering mismatch

- *An engineering organization wishes to use an existing database system to store information from a real-time control system*
 - the real-time control system delivers a periodic data feed...
 - ... the database can't guarantee to respond in time with an acknowledgement



Computational mismatch

- *A company's Marketing department wishes to use the R&D department's document management system to store the master copies of its literature*
 - the Marketing application accesses documents by filename...
 - ...the R&D system accesses documents by reference number



Information mismatch

- *An company wishes to integrate their Marketing and Accounts systems*
 - each keeps information about 'customers'...
 - ... but their definition of a 'customer' is different



Enterprise mismatch

- *Two airlines wish to connect their reservation systems*
 - each has a policy on cancellations...
 - ...one gives automatic refunds
 - ...one automatically rebooks



Summary