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SYSTEMATIC THOUGHT LEADERSHIP FOR INNOVATIVE BUSINESS

Virtual Organizations: a Business Perspective

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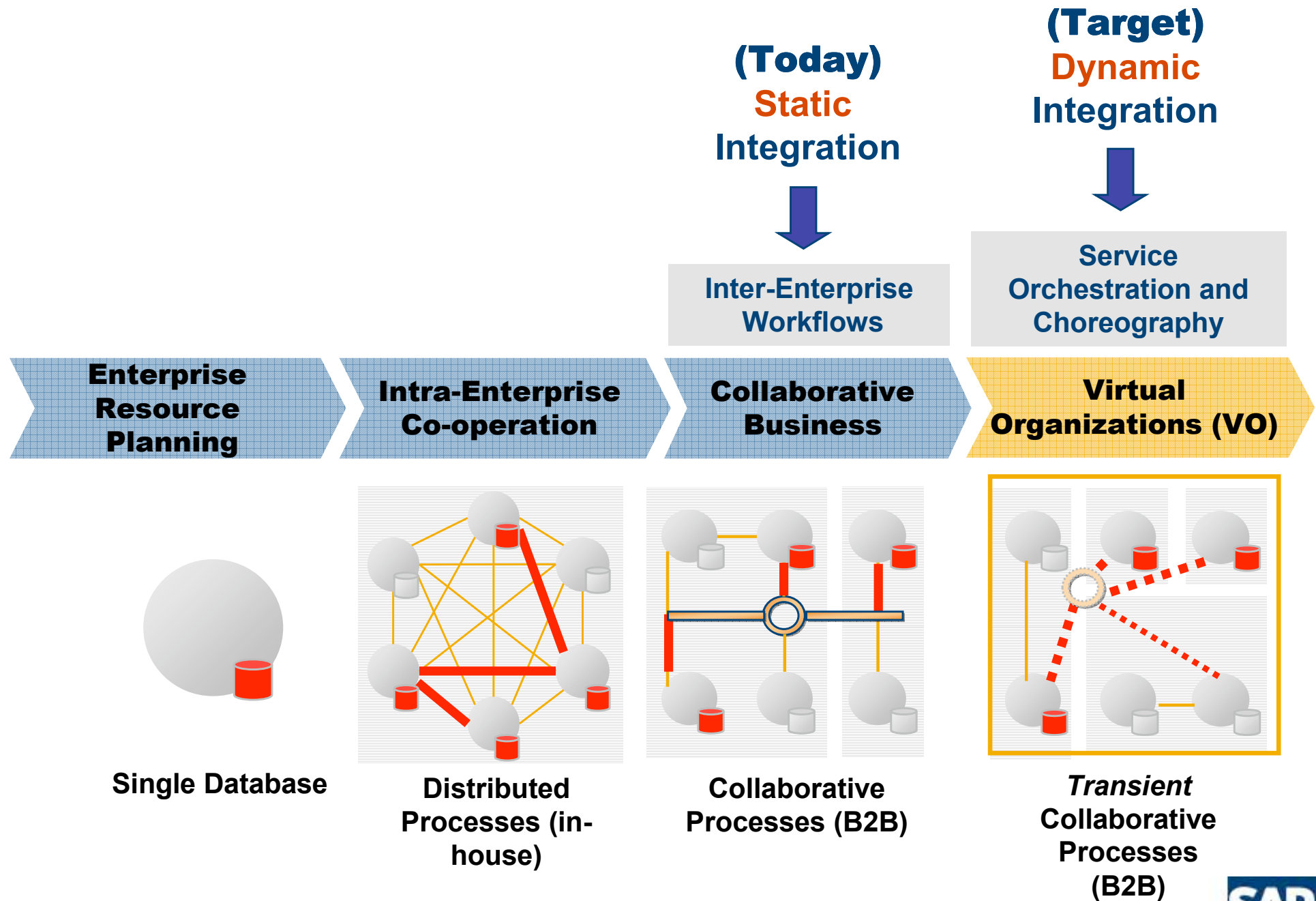
Virtual Organisations And Grids 2006

THE BEST-RUN BUSINESSES RUN SAP



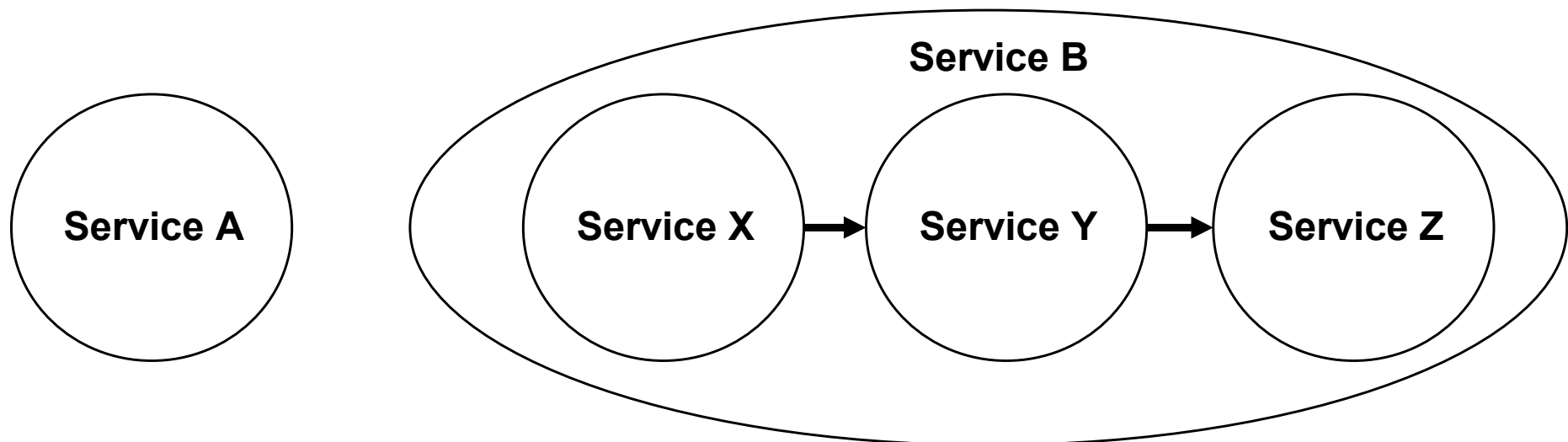
Current State and Future Development

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Core of Businesses: Services

- Simple services solve a problem on their own
- Complex services may combine the functionality of several simple services
- Services have explicit or implicit relationships
- Relationship may be **static** or **dynamic**
- **Services use resources** to deliver its capabilities





Characteristics:

- are formed to **support** some set of **business processes**
- **combine** different **services** from different participants
- are usually backed by some form of **formal contract**
- are defined on different organizational levels
 - ◆ agreement to **collaborate** on the defined level
 - ◆ Each participant (service) gets **access authorizations** from other participants (services)
- **not limited to infrastructure (no simple sharing)**

eScience Grids

... SW landscape

- collections of batch jobs
- automated batch processing by task bag abstraction
- file-based

... size

- targeting the world-wide thing

... job characteristics

- stateless batch jobs
- highly mobile

Business Grids

... SW-landscape

- interactive and batch jobs
- middleware (Web-/Application Servers,...)
- database-based

... size

- a few administrative domains

... job characteristics

- stateful services and jobs
- restricted mobility (licensing)

eScience Grids

... data characteristics

- relatively flat data structures
- no transactional data

... Service Level Agreements

- performance isolation of individual applications
- often best effort approach (get it done at all)

... don't care about legacy

... main drivers

- get the compute power
- get it done at all/quicker

Business Grids

... data characteristics

- highly structured data
- transactional data (OLTP)

... Service Level Agreements

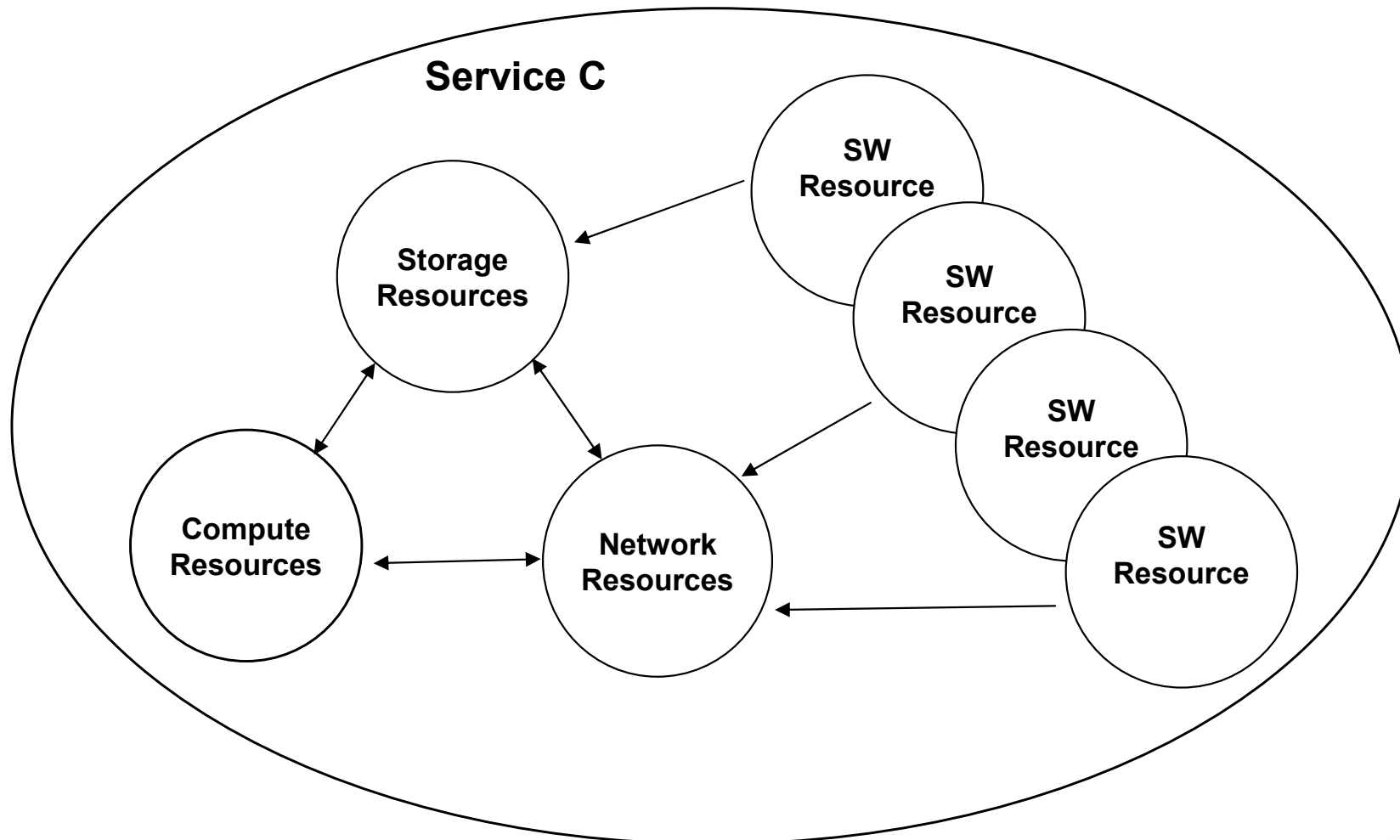
- need for performance isolation across applications, middleware
- isolation within and across basic resources

... legacy support is a must

... main drivers

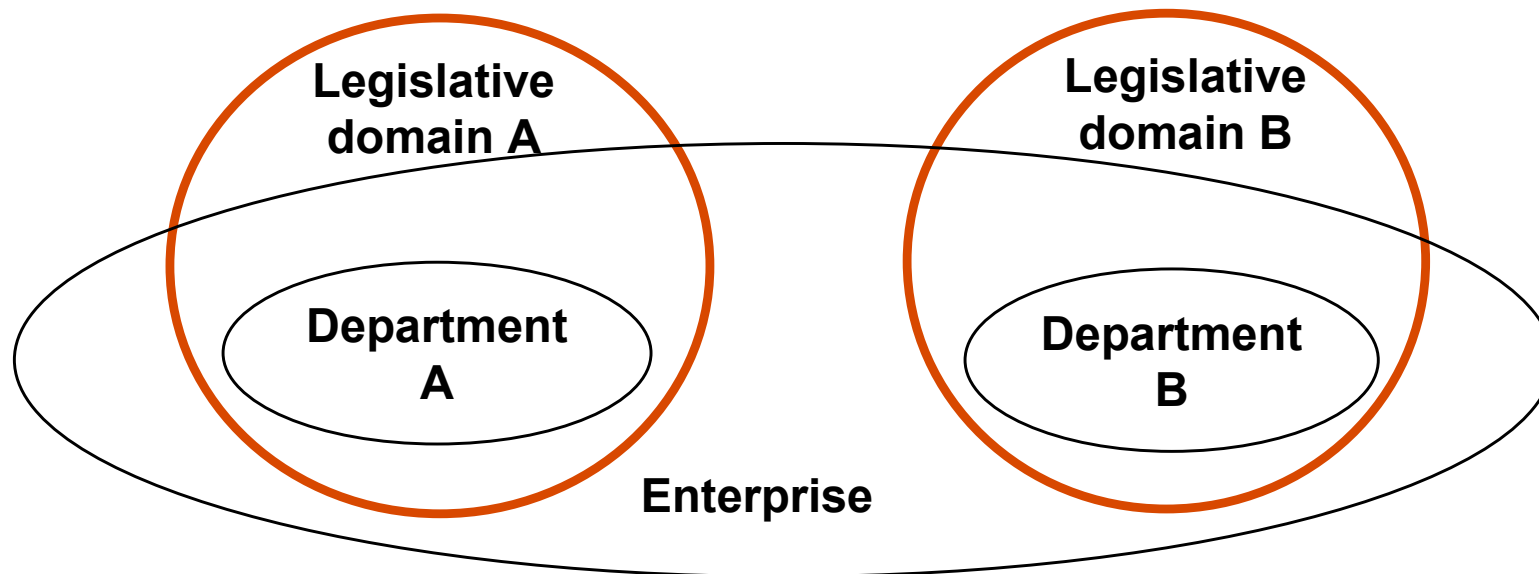
- improve administrative flexibility
- get it done efficiently (cost vs. customer-specific quality)

- Organization may use resources and services provided by another organization to deliver as service
- Treating underlying resources as a case of a service

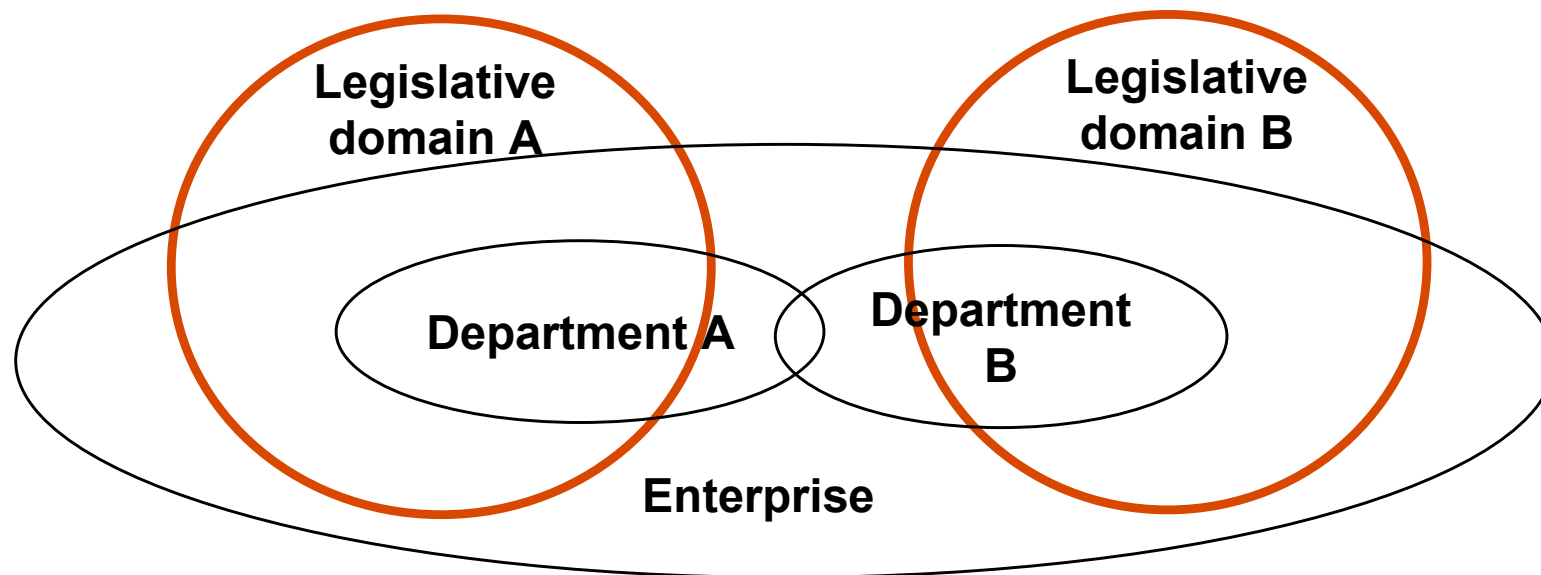


■ Enterprise: single administrative domain

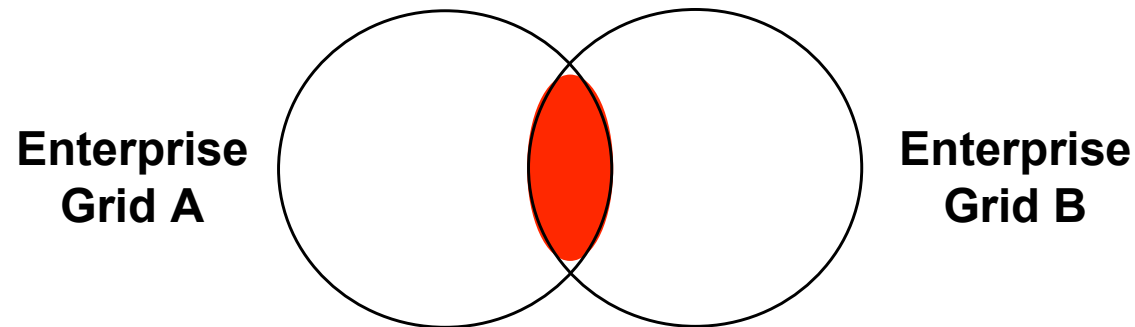
- ◆ Might include several departments
- ◆ Common set of management policies
- ◆ Might span multiple countries (legislative domains) and may have different local legal requirements ⇒ potential problems of resource/service usage



- **Reality: consistent subset of administrative rules that comply with all legislative domains**
- ↳ **Sharing of enterprise resources without major restrictions**



Subsets of two Enterprise Grids overlap



- In most cases only a subset of the overall grid within an Enterprise is likely to be contributed to a VO
- Contracts in business usually between two parties
- “Add one by one to the VO”
- Two kinds of inter-organization relationship
 - ◆ Master/Slave
 - ◆ Peer-to-Peer

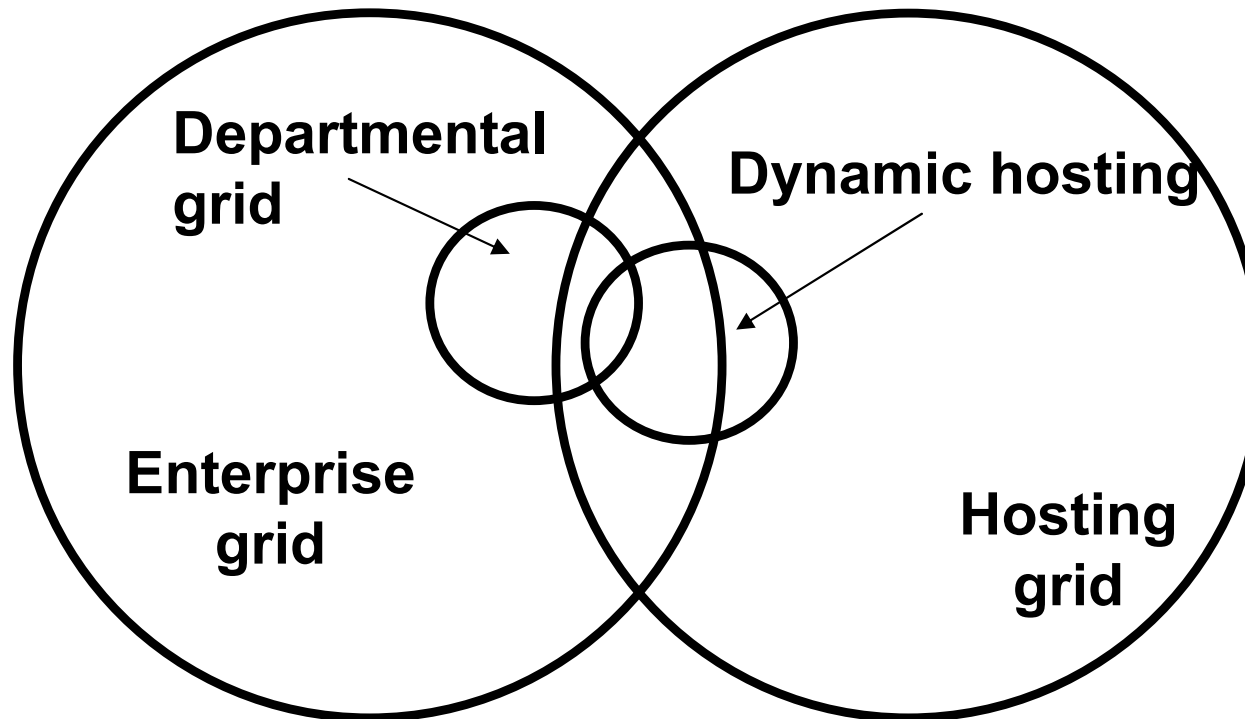
■ Today

- ◆ Hosting is static by using pre-allocated resources
- ◆ Allocation for a long period of time (weeks, months, years)
- ◆ Billing is relatively easy

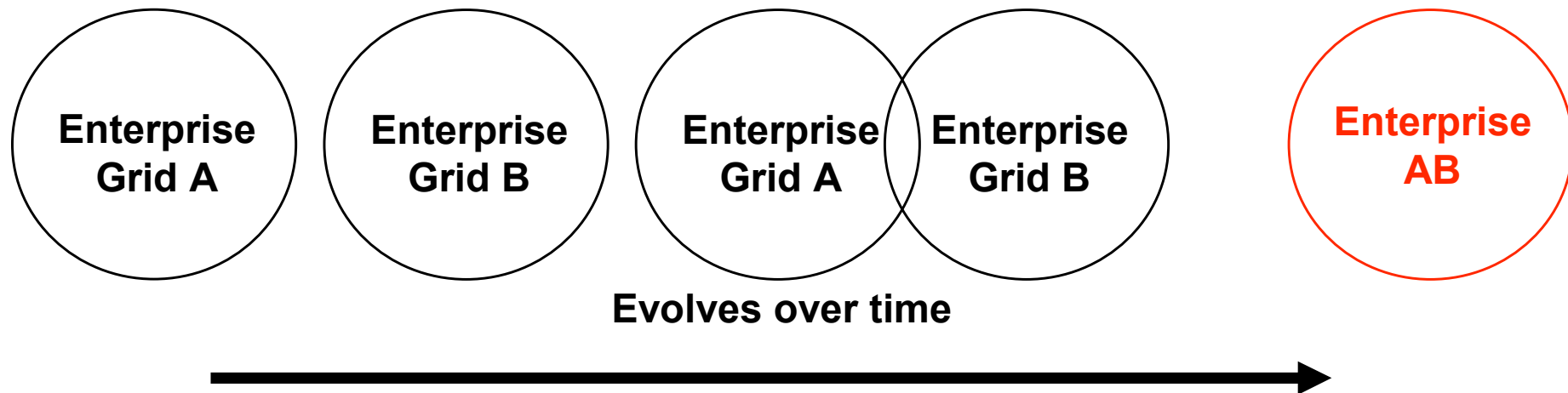
■ Future

- ◆ Dynamic hosting
- ◆ Short-term allocation (minutes)
- ◆ Allocation on demand with some real-time functionalities
- ◆ More advanced billing and accounting mechanisms required

More complex inter-relationships are possible



Mergers & Acquisitions



■ Functional:

- ◆ Reliable and secure accounting and billing
- ◆ SLA monitoring and penalty management

■ Security:

- ◆ Strongest security and isolation
- ◆ Strongest protection against external threats

■ Performance:

- ◆ Highly efficient operations (virtualization technologies)
- ◆ Prediction and enforcement of performance characteristics (SLAs)

■ Manageability:

- ◆ Remote infrastructure management
- ◆ Mass automation

■ Flexibility: on-demand and with migration of services

Thank you!

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