



# **Reliable Orchestration of Resources Using WS-Agreement**

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# WS—Agreement Usage Example (1) Business Grid Project in Japan





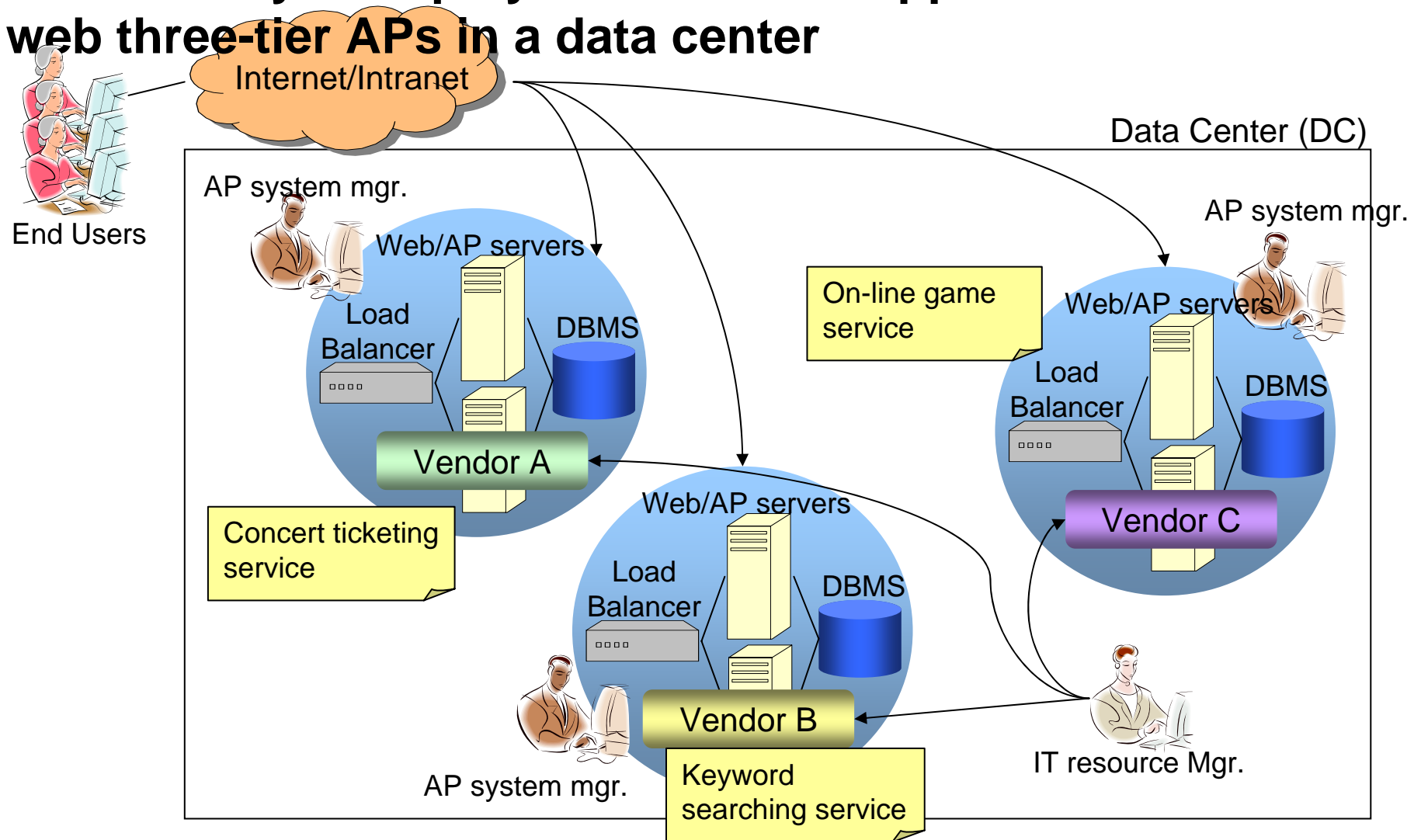
# Business Grid Computing Project

- Mission: Develop Business Grid middleware
  - Next generation business application infrastructure
  - Contribute to international standardization
- Three year project: 2003 - 2005
- Industry Members: Fujitsu, Hitachi, and NEC
- Collaborate with Grid Technology Research Center of AIST
- Jointly funded by the Ministry of Economy, Trade, and Industry (METI)
- Resultant components are to be available as “open-source”
- For more details please visit EGR-RG 30<sup>th</sup> Jun. 9:00-10:30!!



# Application Target

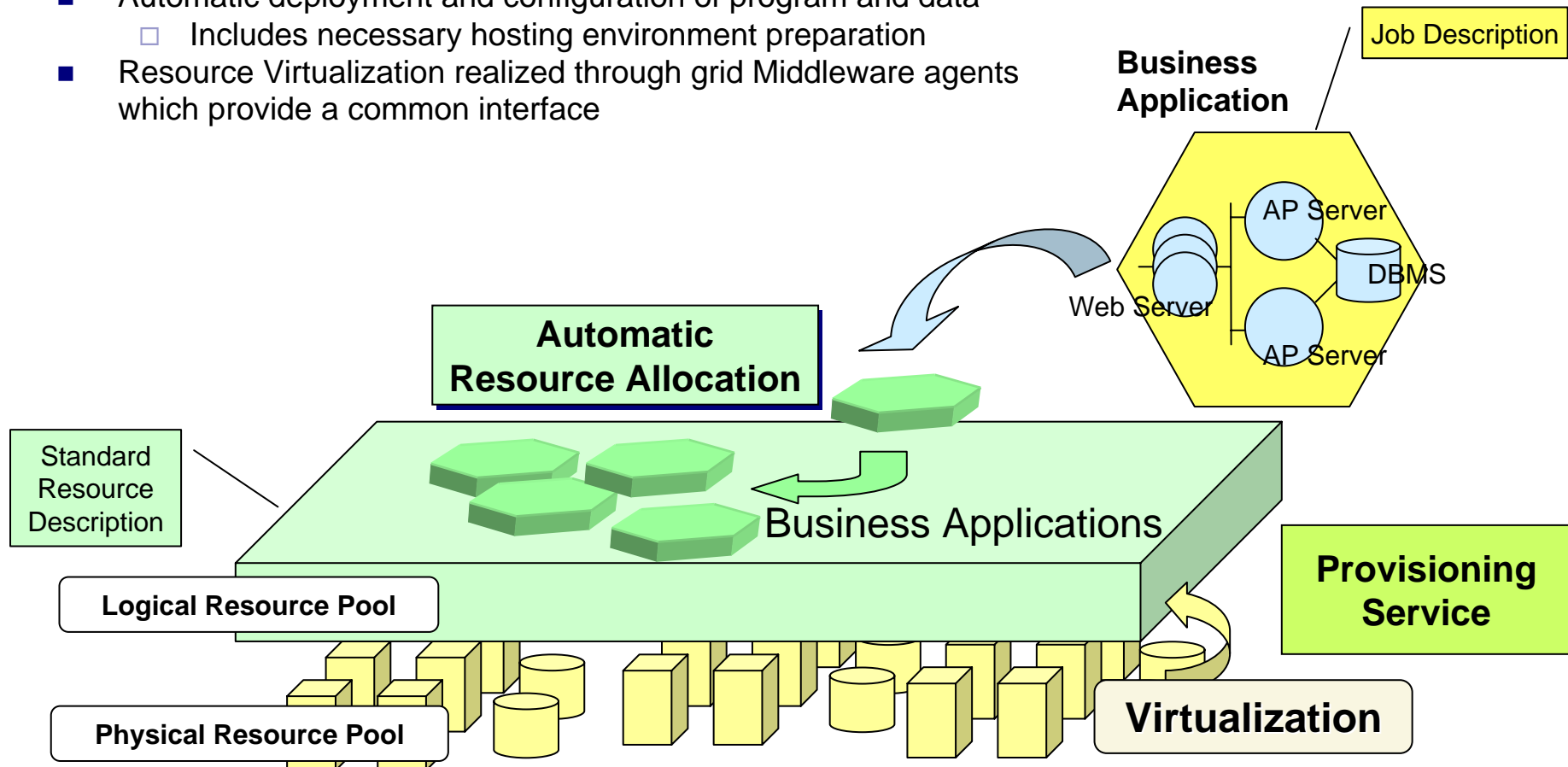
Make it easy to deploy/run business applications such as web three-tier APs in a data center





# Big Picture - how it works -

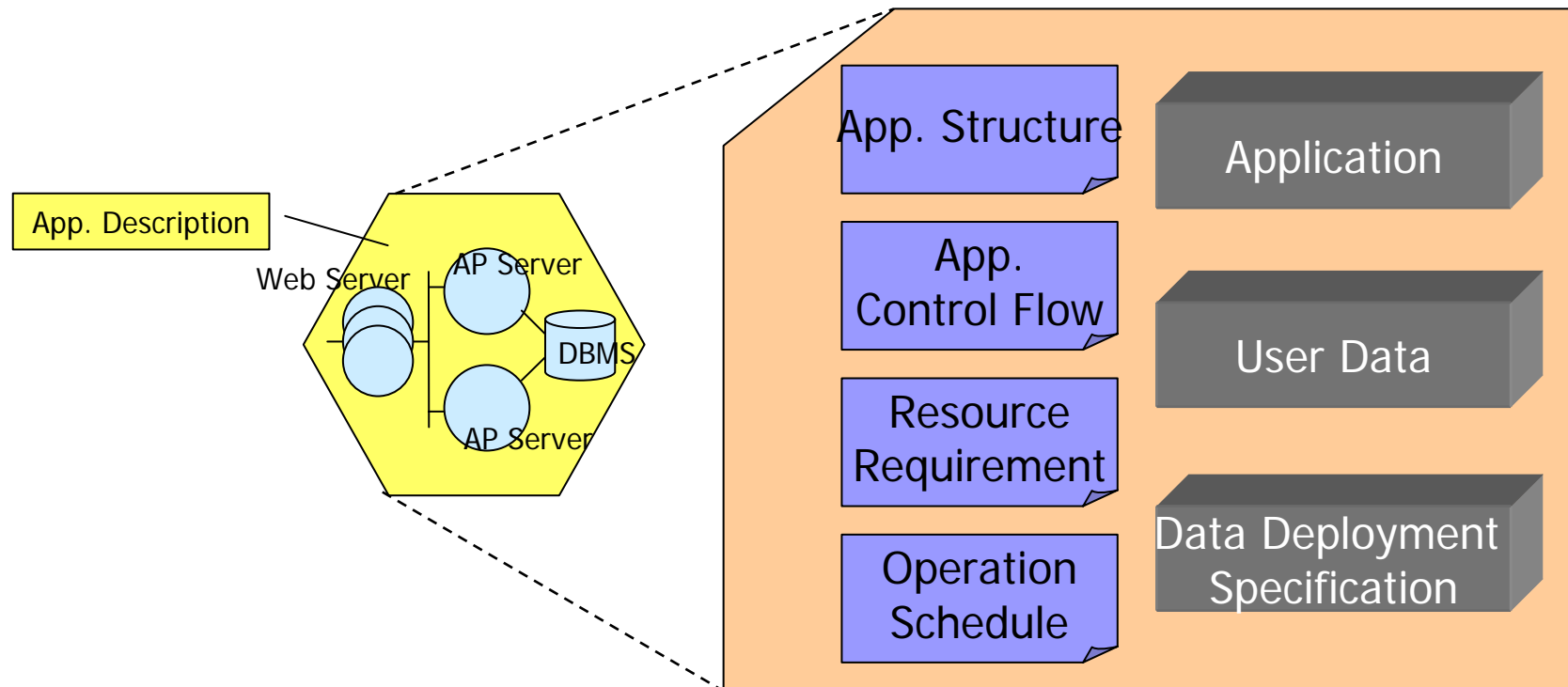
- Job Submission
  - Standard job description (using WS-Agreement+JSDL with extensions protocol) and application contents service
- Brokering allocates necessary IT resources
- Automatic deployment and configuration of program and data
  - Includes necessary hosting environment preparation
- Resource Virtualization realized through grid Middleware agents which provide a common interface





# Application Description

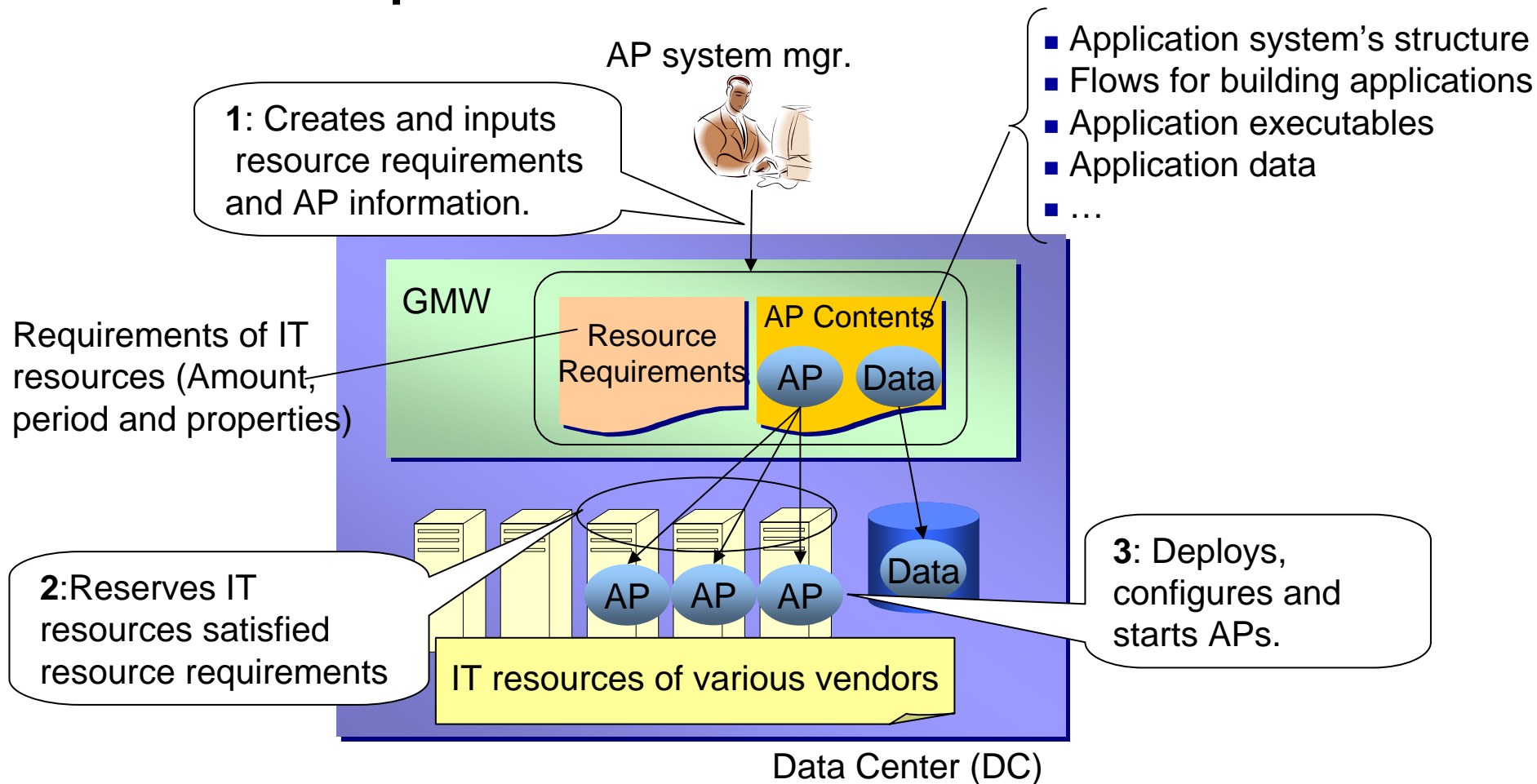
- The Application description in BizGrid not only archives the relevant execution modules, but also maintains all necessary information in one package, in order to manage the entire lifecycle of the operation.
- The description contains the specification of app. structure (e.g. 3-tier Web App). It enables mapping between the job and virtualized resources, automatic deployment of execution modules and autonomic control of the resource allocation.





# Scenario 1 Building an application system

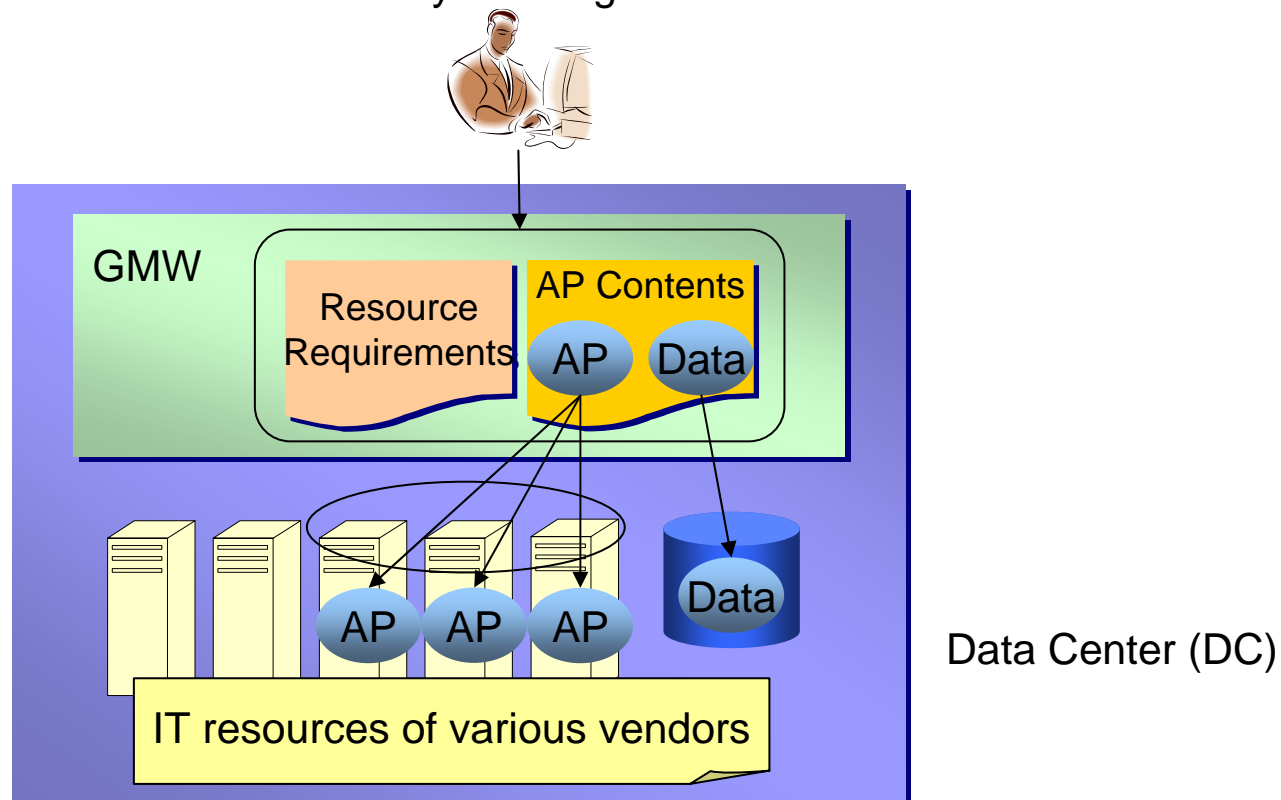
## Building an application system in a data center with resource requirements and AP contents





# Role Players

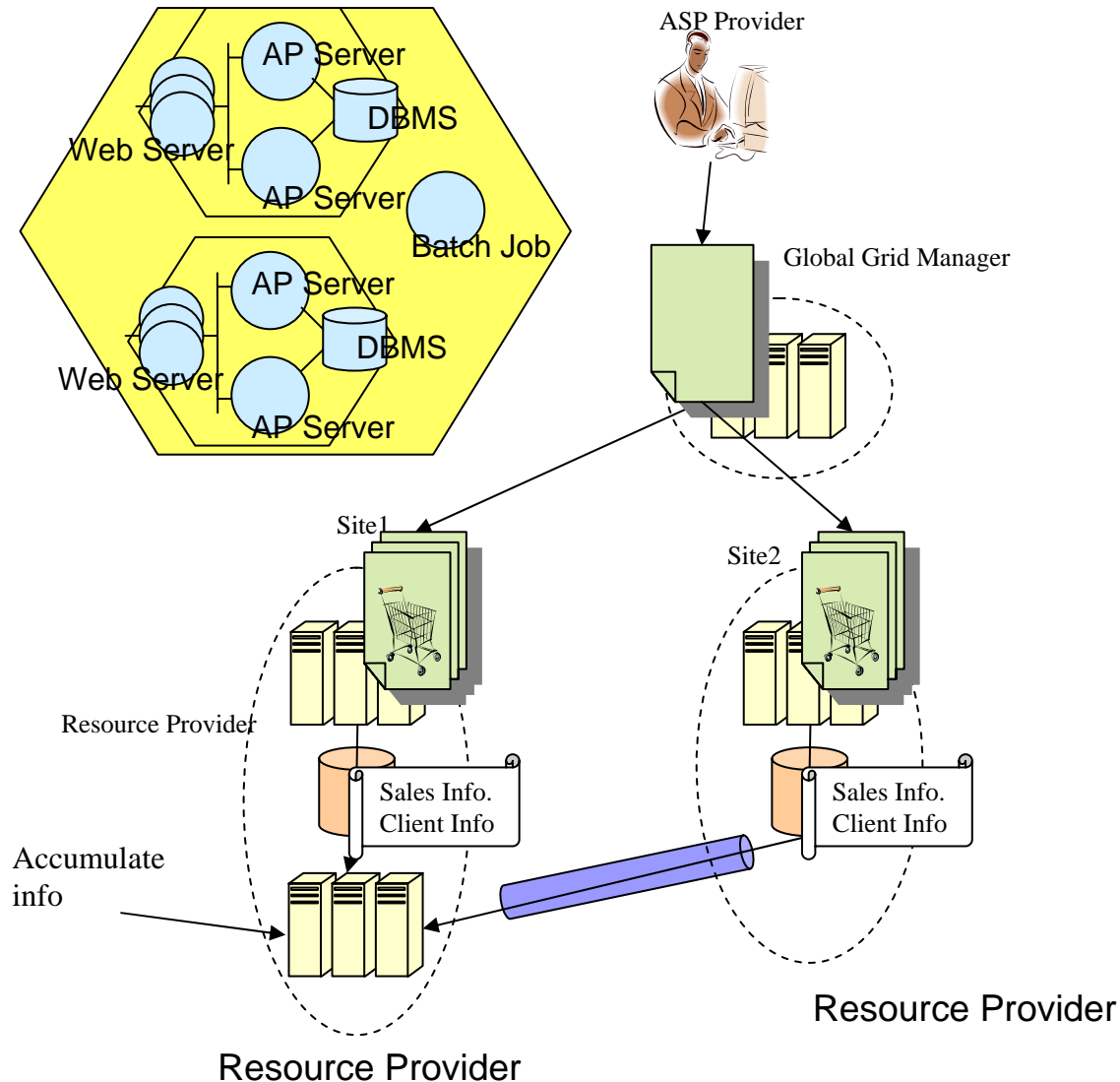
- Service Provider= Agreement Provider= Data Centers
- Service Client= Agreement Initiator= AP system mgr.
  - (End-Users are not player in the scenario)





# Realization of Wide-Area Business Grid

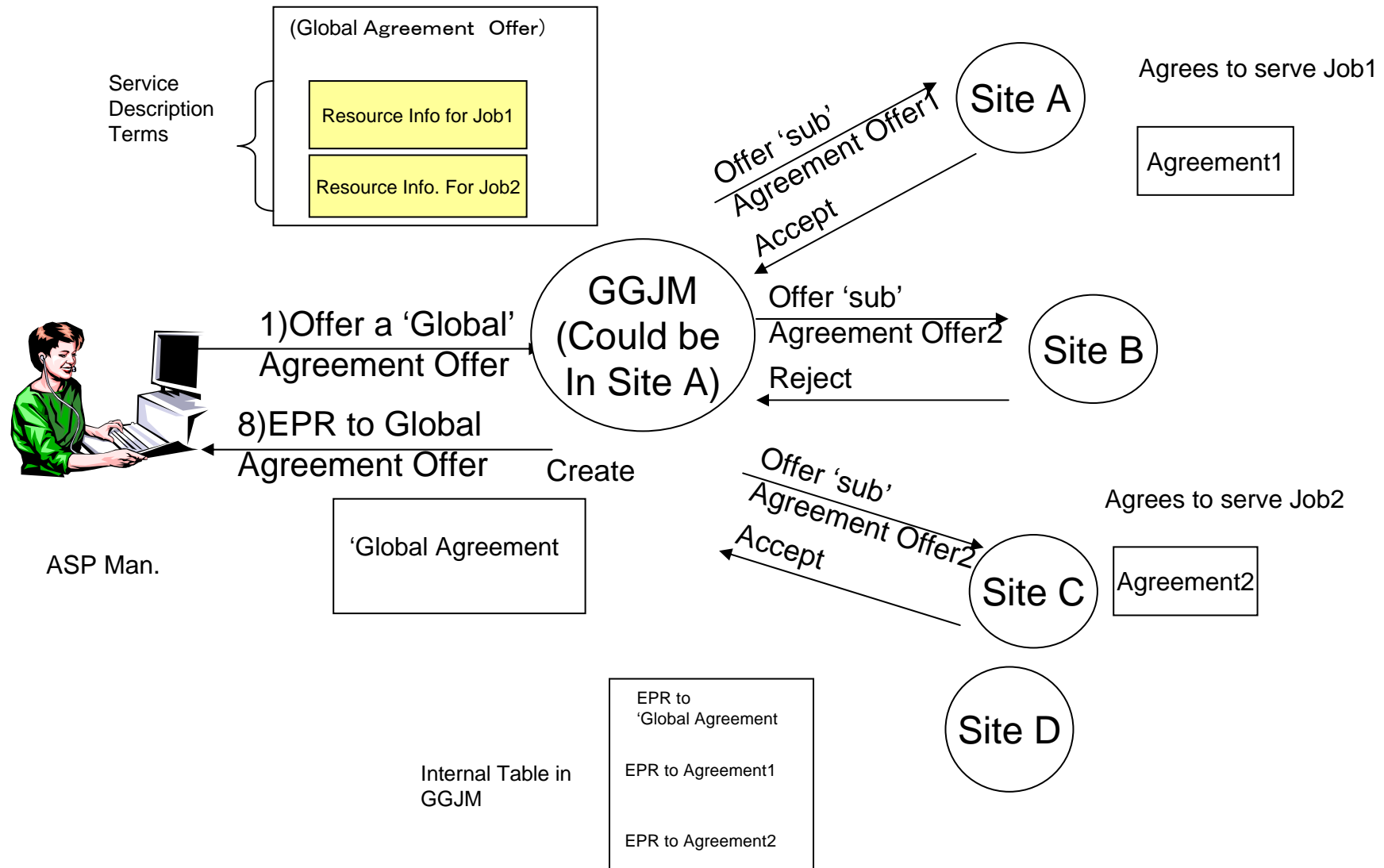
## JobDescription



Share IT resources based on the contract/agreement among 1) Distributed Centers in an Enterprise, 2) Among Trusted partner Data Centers => Make it possible for an ASP Provider (client) to dispatch a Complex Job from an entry point



# ■ Image of Global Agreement Offers and the sequence







## How SLA's are Realized.

- Usage of Range Parameters to specify Minimum/Maximum amount of resources.
- User-level Policy is included to realize SLA's within the Min/Max amount of resources.
- If SLA cannot be realized even with Max. Resources  
=>Do renegotiation to get more resources (Out of scope of the current WS-Agreement Scope)