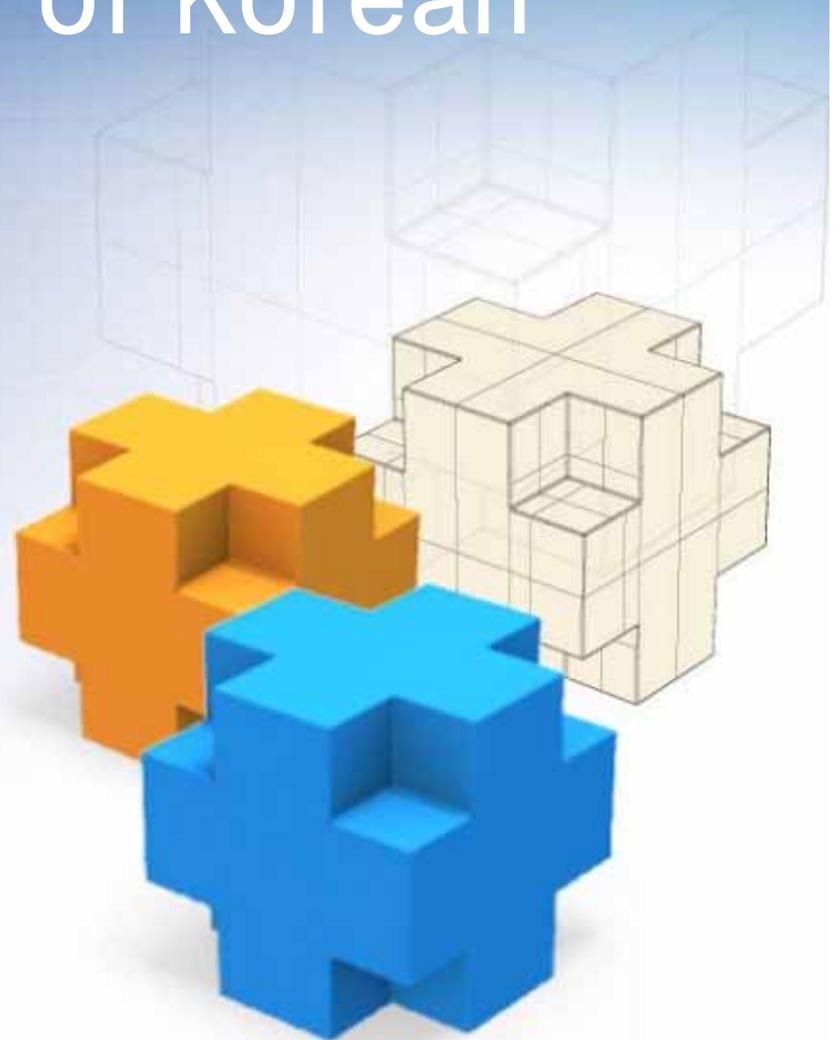


# Trend and Prospect of Korean Grid Business

Junseok Hwang  
Seoul National University  
Korea

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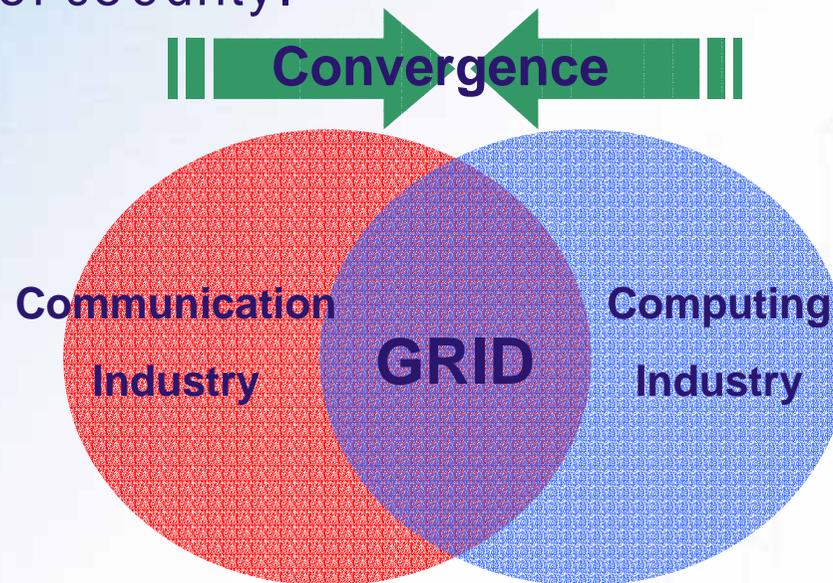
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- ❖ **Grid Computing & Grid Business**
- ❖ Status of Grid Business in Korea
- ❖ GBA(Grid Business Association) Overview
- ❖ Challenges of Grid Business in Korea
- ❖ Suggestion for Successful Grid Business

# Grid Computing

## ❖ Grid Computing in the convergence area

- Grid is positioned in the convergence area of computing and communication.
- Communication in the Grid system can strength computing capability, but needs more scalability, QoS, stability of security.



# Grid Computing

## ❖ The importance of Grid Computing in the IT industry of Korea

- The IT industry structure now in Korea performs good at the telecommunication industry, but not good at the computing industry.
- The level of computing industry in Korean can be lifted up by activating Grid computing.
- Grid computing is a challenge and opportunity for Korea, which has the strong know-how in the telecommunication industry, to lead next generation business models using Grid service over the world.

# Grid Business

## ❖ Definition of Grid Business

- Commercial IT services based on the Grid technology

## ❖ Fields of Grid Business

- Vendor: IBM, HP, SUN, Oracle, United Device, Datasynapse, Akami, Entropia, Platform computing
- Industry: health (including medical treatment), education, game, broadcasting media, rendering, GIS, airline & automobile business, finance
- Telecommunication: NTT, BT, AT&T

# Status of Grid Business - Vendors

## ❖ Major IT Platform enterprises

- IBM, HP, Sun Microsystems, Oracle, Silicon Graphics, Inc.
- They are trying to apply Grid system adopting utility computing to the consulting or SI over the entire system for a company.
- Having made alliances with almost all the Grid projects and Grid companies currently in progress over the world.
- Participating in several activities related to standardization such as GGF, EGA, etc.

# Status of Grid Business - Vendors

## ❖ Independent software enterprises

- United Devices, DataSynapse, Akami, Platform Computing, etc.
- High reliability on major IT platform enterprises.  
(ex. DataSynapse on Intel, Akamai on IBM platform)
- United Device: a leader of the Bio - technology and business focused on calculation, a predecessor of @Home
- DataSynapse: Development of Grid applications mainly with financial service experts
- Akamai: a leader of CDN (Contents Delivery Network). Data transmit network, being applied to broadcasting media fields.
- Platform Computing: Development of a meta scheduler, CFS, for the efficient distribution of heterogeneous Grid resources. Focused on the computation - intensive Grid

# Status of Grid Business - Industry

## ❖ Health, Medical treatment

- Remote medical treatment
- PACS for the effective medical treatment and other hospital affairs
- Collaboration between hospitals and R&D institutes

## ❖ Education

- Collaboration and reuse of contents
- National education infra for cooperation
- Enormous education library contents (papers, moving images, etc)

## ❖ GAME

- Infra for high level MMORPG
- Satisfaction of both the unlimited scalability and the network stability

# Status of Grid Business - Industry

## ❖ Broadcasting Media

- Enablement of the effective streaming, high quality screen and on - demand broadcasting infra
- A main technology in the BcN broadcasting area

## ❖ Rendering

- Use of 20MBytes per frame in animation movies
- A prospective growing area

## ❖ GIS

- Digital maps with high resolution
- Demands not only for the map search but also for the space analysis and the network analysis

# Status of Grid Business - Industry

## ❖ Airline and automobile industry

- Analysis of aerospace structures and fluid mechanics simulations
- The field that is currently using the clustering, the predecessor of Grid, most actively

## ❖ Finance

- Tried to apply to various fields such as Capital market, Insurance, Financial solution, etc
- Needs for business continuity (LOB), time to market and accuracy among affairs because of the nature of this field.

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# Status of domestic Grid Business – Solution enterprises

## ❖ Major IT platform enterprises

- IBM
- Oracle
- SUN Microsystems

## ❖ Independent software enterprises

- National Grid : N\*Grid Middleware
- Peering portal : Pcube Stream (decentralized streaming, CDN)
- PSPACE Inc. : Rendering Service

# Status of domestic Grid Business – applied enterprises

## ❖ Finance

- Good - morning Shinhan Securities Corp
  - Analyzed related commodities using Grid Computing, which ties traders' personal computers, for the first time in the domestic financial field.
  - Applied the 'N\*GRID' of National Grid, Inc.

## ❖ Broadcasting media

- Pandora TV (a streaming service company), Bugs, Melon, Muse (music portals)
  - Adopted Grid technology for reducing network burden and enhancing service stability
  - Applied the distributed streaming solution 'Pcube Stream' of Peering Portal, Inc

## ❖ Education

- Seoul National University medical school
  - Constructed a remote image lecture system based on access Grid
  - Applied technologies of SsangYong Information and Communications Corp

# Status of domestic Grid Business – applied enterprises

## ❖ Grid Clustering

- Manufacturing companies such as Rotem (KTX high speed train producing company), DAS (air bag and seat producing/supplying company), ETS (DAEWOO automobile components supplying company), Mtekvision (semiconductor design company), etc
  - Composed a high - tech computer using Grid clustering which is as fast as a super - com
- Samsung electronics
  - Clustered the Onyang semiconductor plant, the Suwon Samsung electronics supercomputer group, and the Samsung advanced institute of technology supercomputer group
  - Applied the high - tech computing cluster system of Samsung electronics computer system enterprise department
- Yulrinwoori party, Daejeon cityhall, the Korean Meteorological Administration
  - Substituted clustered X86 servers for middle/large size enterprise servers
  - Applied the Grid clustering solution, Encluster2, of Clunix



# Status of domestic Grid Business – Government

- ❖ In May 2001, Korea Ministry of Information and Communication constructed the basic schedule of the national Grid for Grid infra to make up u - Korea
- ❖ They selected the basis for activating business Grid through IT839 as a goal of tge second step of the national Grid project
- ❖ Goals of year 2006 are to construct Grid service organization, to promote the basis for business Grid, and to test pilot projects of Grid business.
  - Grid ASP service : KT
    - Services which supply applications using distributed computing environments that use virtualized resources and make different charges according to the required ability and quality
  - Online game service: Empas consortium
    - Game services which can make several online games to co - use server infra together based on the Grid



# Movements for Revitalization of the Grid Business

## ❖ GECON

- International Workshop on Grid Economics & Business Model
- Co - sponsored and managed by KISTI and SNU
- Had been held in Seoul, Korea for the first 2 times(2004 and 2005), and the 3<sup>rd</sup> workshop(2006) held in Singapore
- Researchers and Businesses from around the world
  - Business Session: IBM, Sun, Oracle, BT, NTT, KISTI, AIST, Telecom Italia Lab
  - Academic Session: SNU, The University of Melbourne, University of Pittsburgh, UC Berkeley, Syracuse University, International University of Germany, University of Vienna

## ❖ Business Grid Symposium

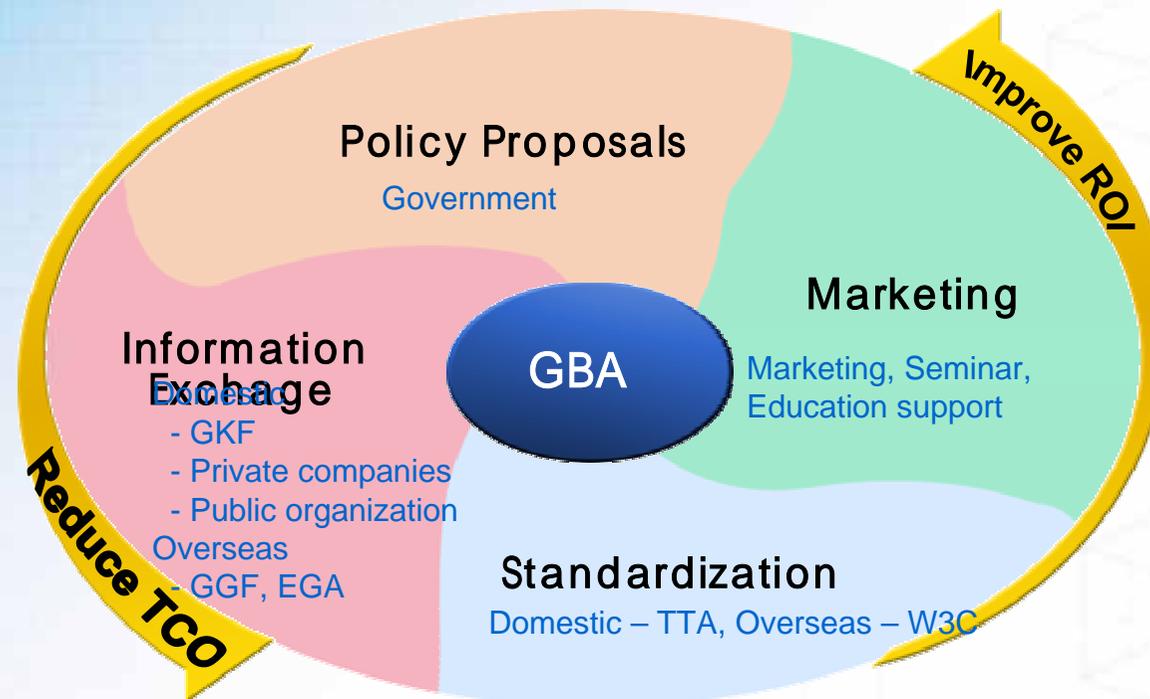
- Symposium for domestic Grid service vendors was held to revitalize the Grid Business in Sep. 2005
- The main subjects were to develop localized business models and to achieve international competency of Korean Grid Technology.

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# GBA Overview

- Information exchange and policy proposals for the commercialization and standardization of Grid technology
- Leading the global standardization of Grid technology based on cutting edge IT infra and technology
- Policy proposals in order to open and vitalize grid business market



# GBA Overview – Functions(1/2)



# GBA Overview – Functions(2/2)

Leading the global standardization of grid technology

Policy proposals for market vitalization

Grid Business Vitalization

Information exchange with oversea grid related organizations and companies

- Grid Technicians through Grid Forum and specialized program
- Authentication Business

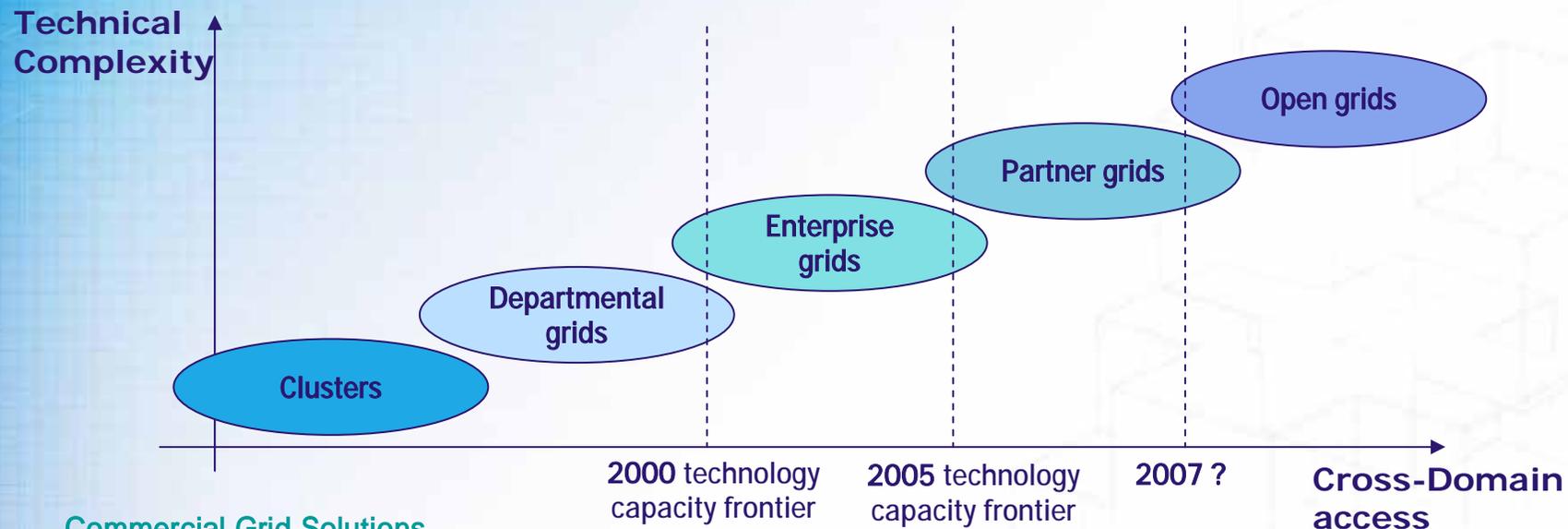
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# Present Stage of Grid Business

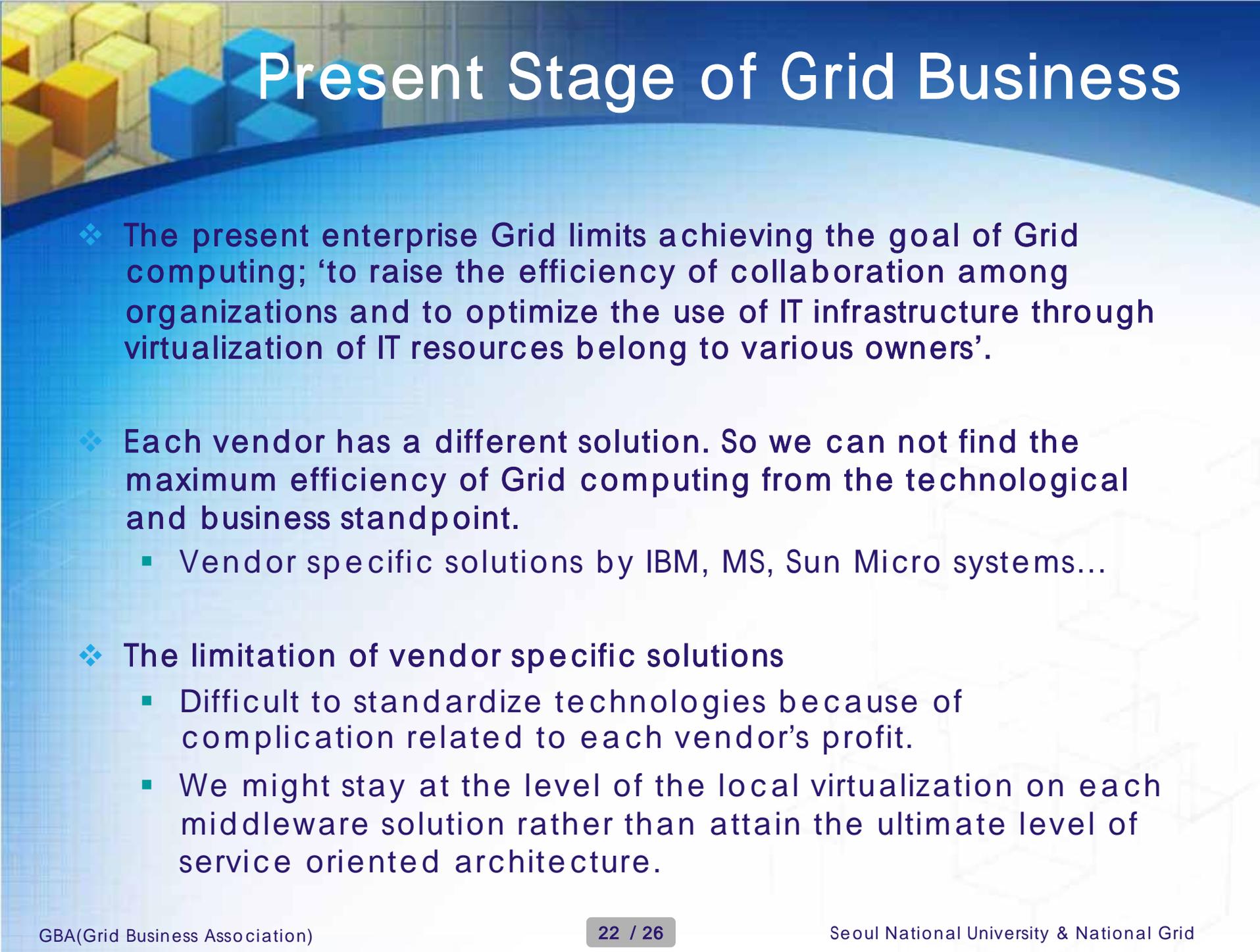
- ❖ Current Grid solutions are enabling only a few software vendors' applications

So, the present stage of Grid business is the “Enterprise grids” in the view of cross-domain access



Commercial Grid Solutions

Source: P. Plaszczak, R Wellner, Jr, *Grid Computing –The savvy manager's guide*, Elsevier, 2006



# Present Stage of Grid Business

- ❖ The present enterprise Grid limits achieving the goal of Grid computing; 'to raise the efficiency of collaboration among organizations and to optimize the use of IT infrastructure through virtualization of IT resources belong to various owners'.
- ❖ Each vendor has a different solution. So we can not find the maximum efficiency of Grid computing from the technological and business standpoint.
  - Vendor specific solutions by IBM, MS, Sun Micro systems...
- ❖ The limitation of vendor specific solutions
  - Difficult to standardize technologies because of complication related to each vendor's profit.
  - We might stay at the level of the local virtualization on each middleware solution rather than attain the ultimate level of service oriented architecture.

# Challenges of Open Grid Service

## ❖ Technical Challenges

- To secure solutions that make the existing platforms and applications compatible with Grid system so the system can be operated efficiently.

## ❖ Economical Challenges

- Reasonable compensation and charge for contribution to building and operating open Grid Infrastructure.
- As a method of securing the cost to construct the open Grid Infrastructure, earnings must be distributed to the contributors.

## ❖ Social Challenges

- Through influence of the open infrastructure, virtualized environments need the new shape of ownership structure.
- For Increasing reliability of various services based on virtualization, political supports concerning SLA (Law/System) are required.

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# Suggestion for Successful Grid Business

New Grid Business Model Creation



GBA(Grid Business Association)

Standardization

Consulting

Info Exchange

Policy Proposal

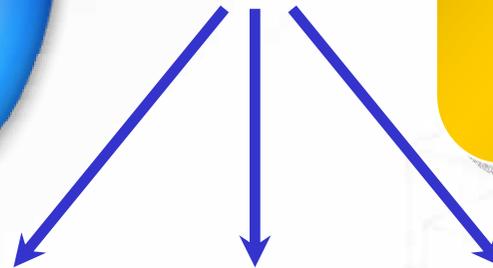
Edu & Marketing

IT Infrastructure(N/W, H/W, S/W, Security)

# Summary

## International Cooperation

SNU  
National Grid  
KISTI  
Samsung SDS  
LG CNS  
SK C&C  
IBM Korea  
Oracle Korea  
Perling Portal  
ANC Tech  
Vine Tech  
etc.



Business

Business

Business

**Thank you**

