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QoS and the Next  
Generation Data Center

HP World Conference in  
Chicago

#047

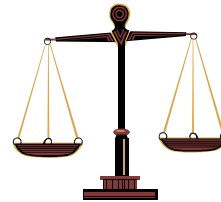
August 2001

Quality of Service  
in the  
Next Generation  
Data Center

Enabling businesses to ...



**deliver optimal  
customer experience**



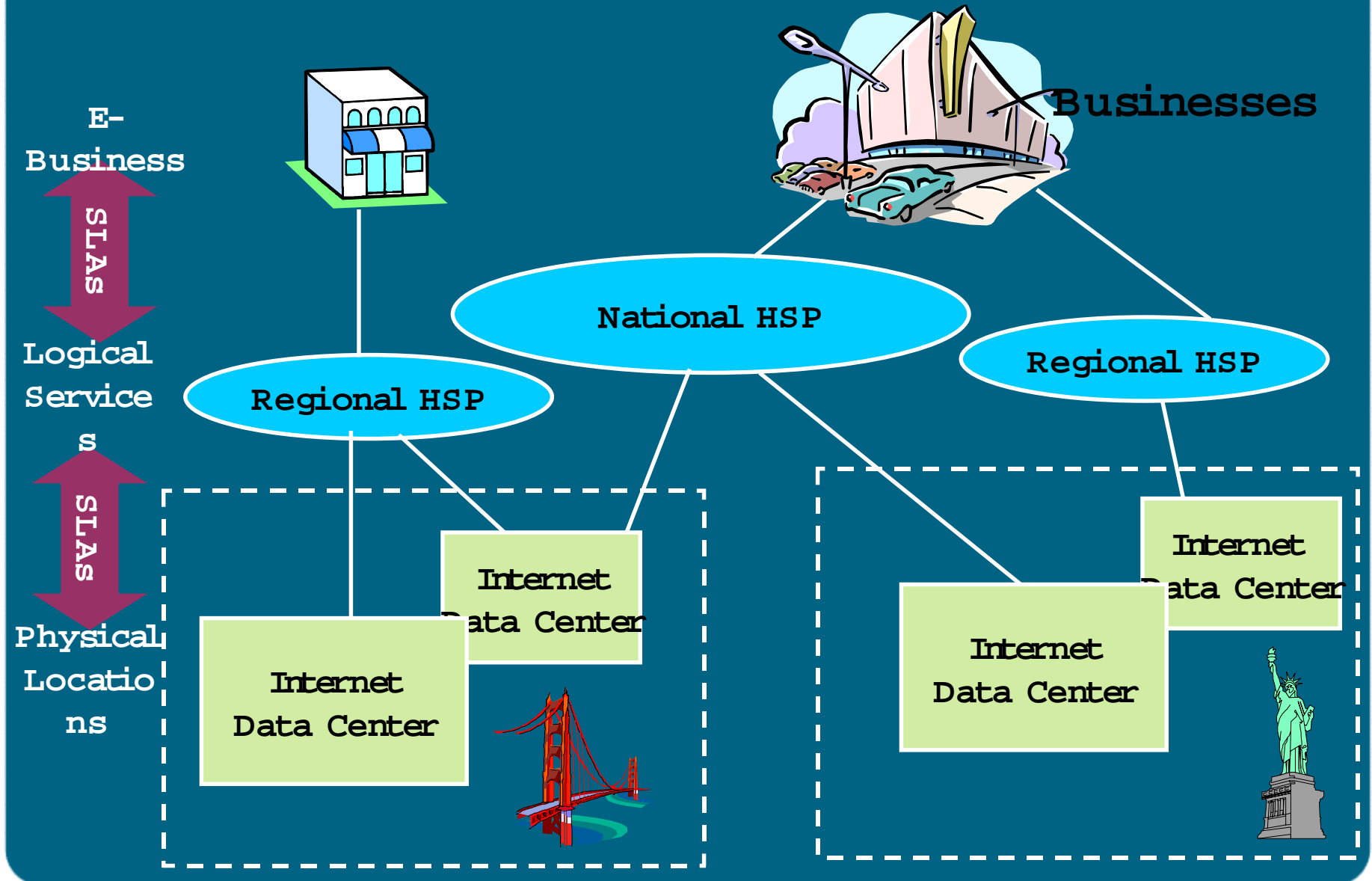
and to ...

**quickly adapt to  
economic conditions.**

# Applying Intelligence to Adapt/Refine Policies



# Relationships of e-Businesses, xSPs, IDCs



# What is QoS?

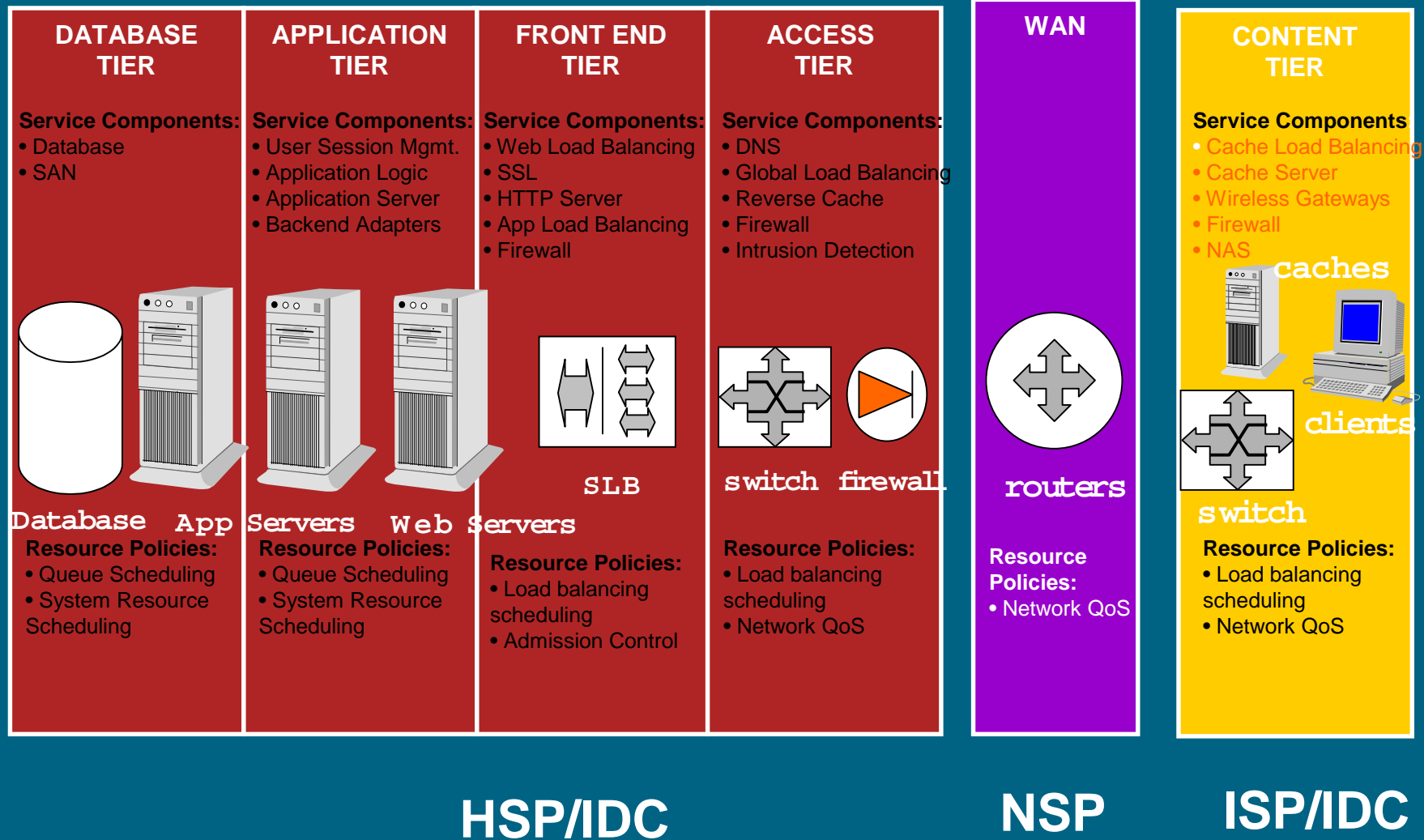
Managing shared utilization of resources when there is:

- too much demand,
- unpredicted workloads, or
- faults

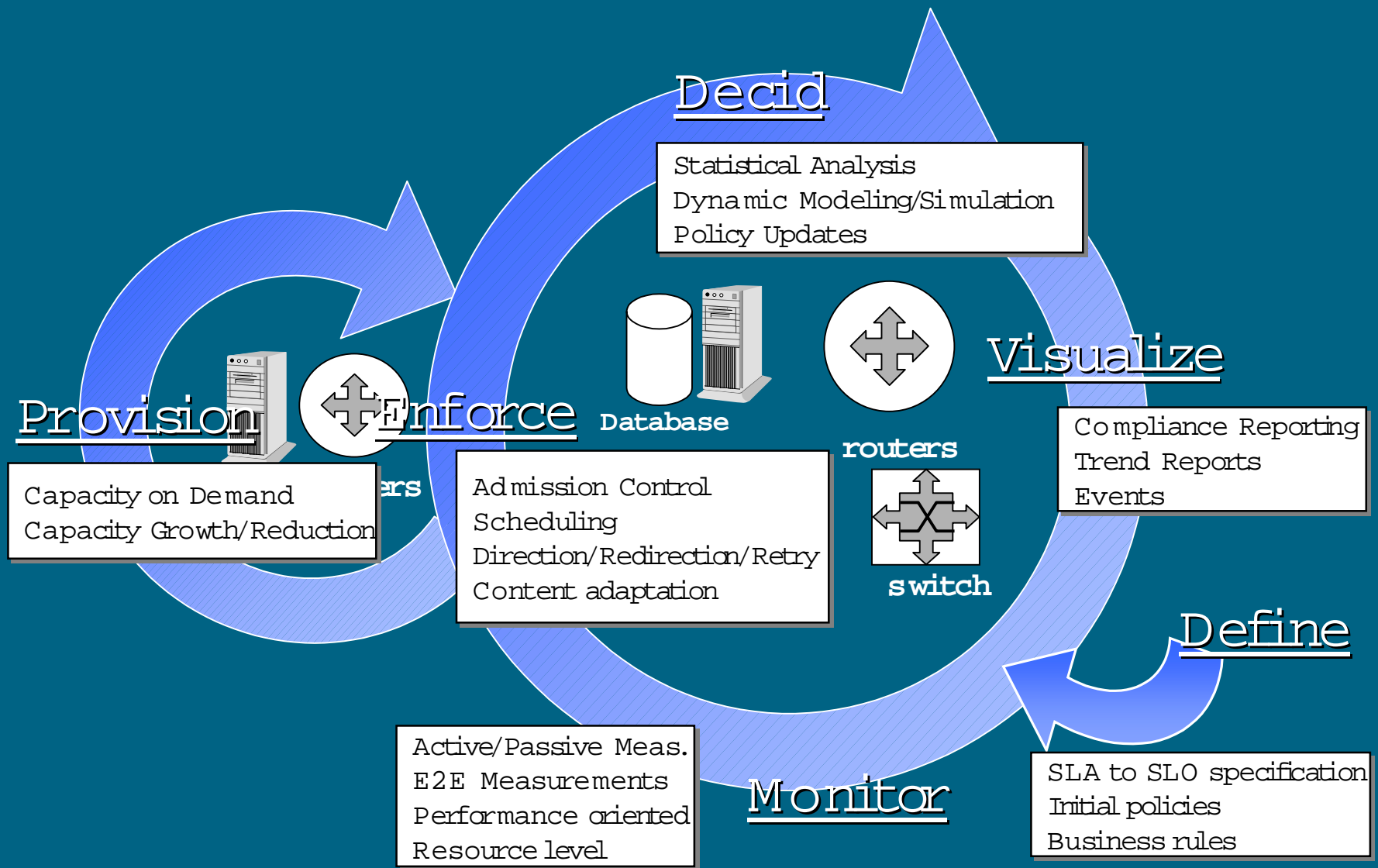
to provide:

- performance isolation
- performance differentiation, and
- overload protection

# Service Model: Physical & Logical



# Closed Loop QoS



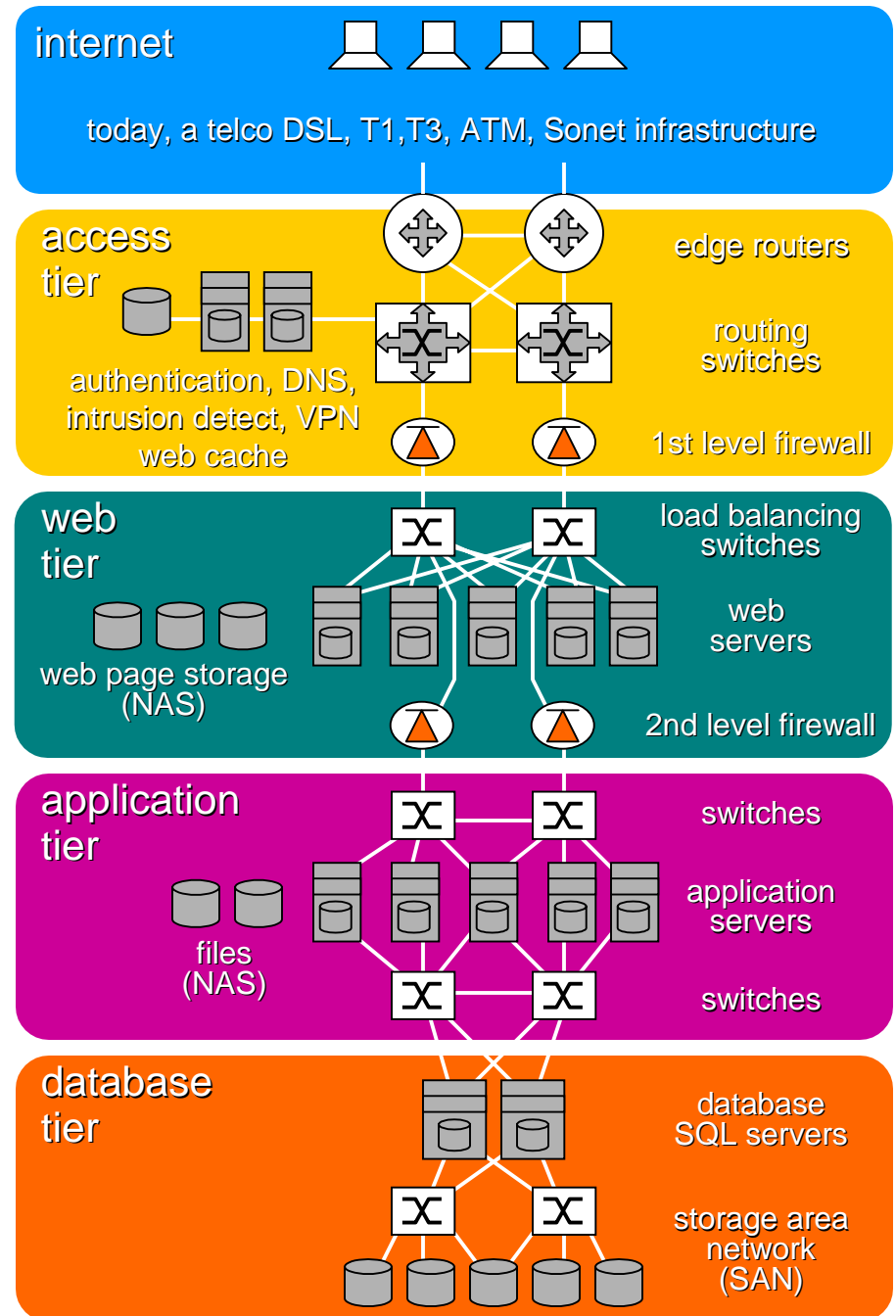
What is the  
Next Generation  
Data Center?

Transforming the  
current data center's highly  
customized model  
into a  
utility model.

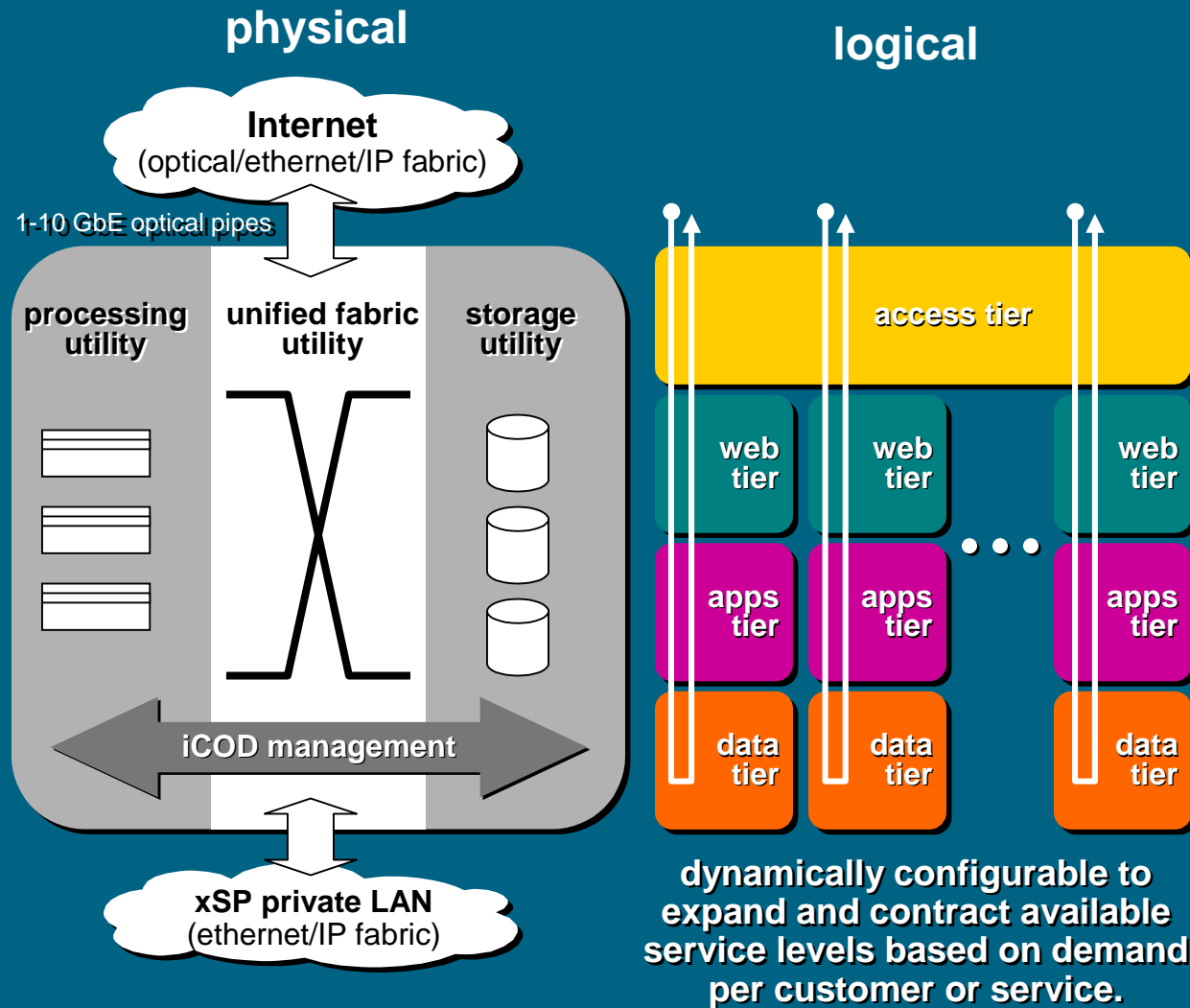


# today's internet data center

- four tiers
- customize bottom 3
- implement many times
  - per customer
  - per service
- **unmet needs**
  - **rapid deployment**
  - **rapid reconfiguration**
  - **rapid adjustment to load**
  - **always-on**



# Next Generation iDC “the utility model”

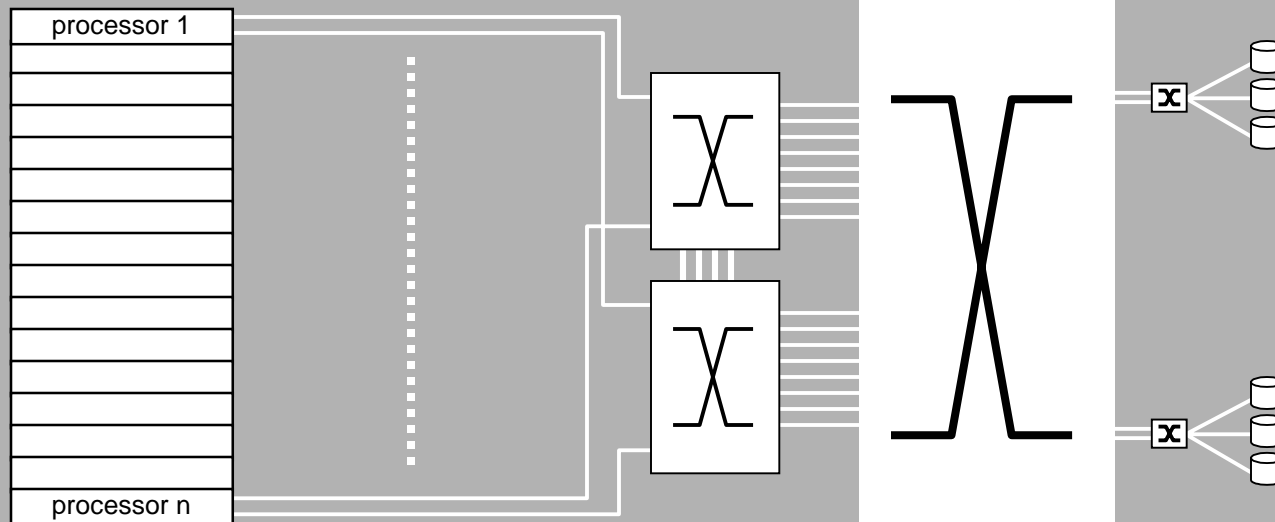


- a new **system** for the internet age
- unprecedented flexibility, scalability & availability
- always-on infrastructure for trillions of e-service transactions

# iDC processing utility

## processing utility subunit

- multiple processors plus interconnect fabric
- different price-performance implementations
  - 1U dual or quad industry standard CPU's
  - mid-range processors
  - smaller numbers of Superdome class processors
- no integral storage -- boot from storage utility



services

access tier

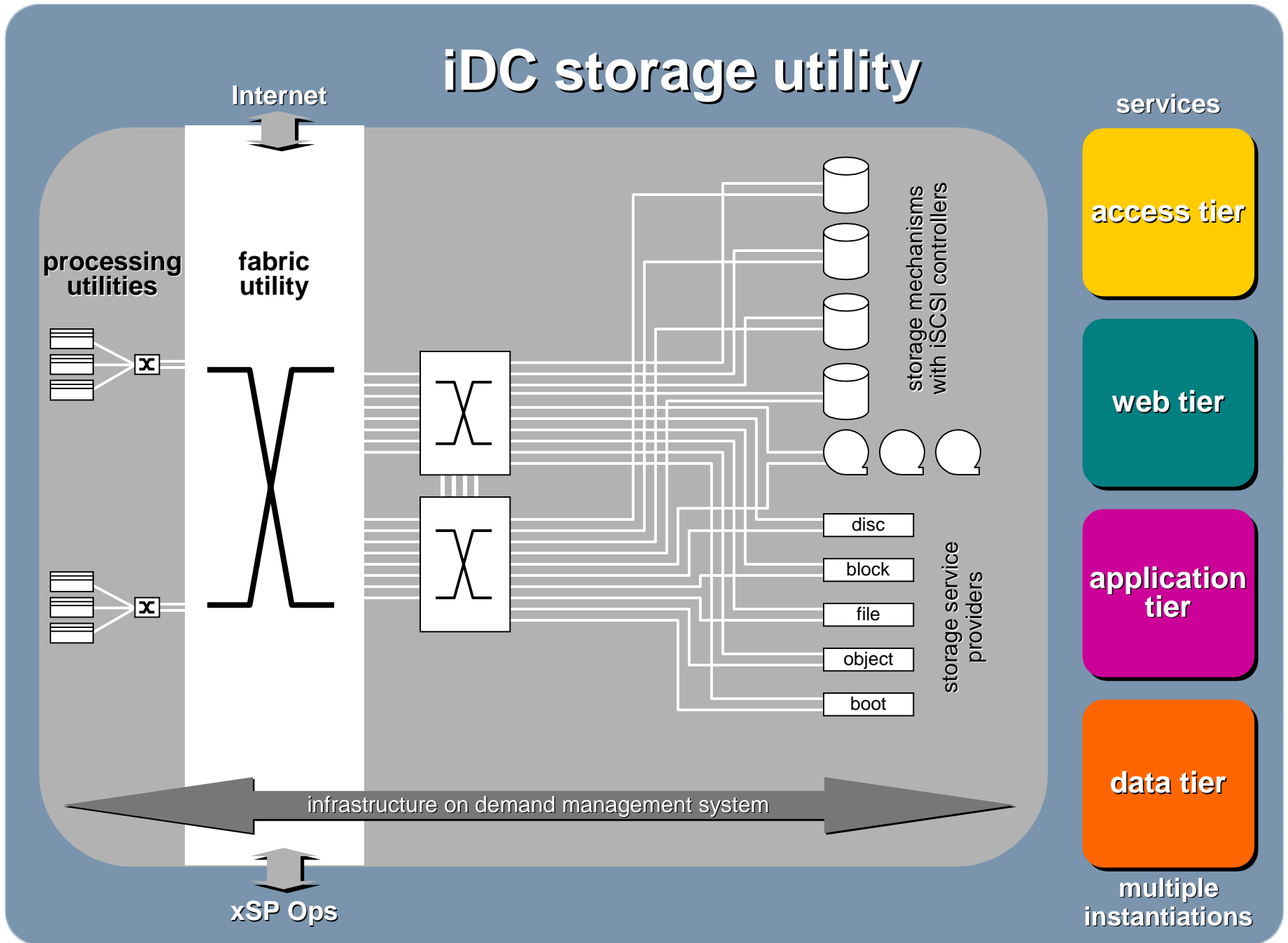
web tier

application tier

data tier

multiple instantiations

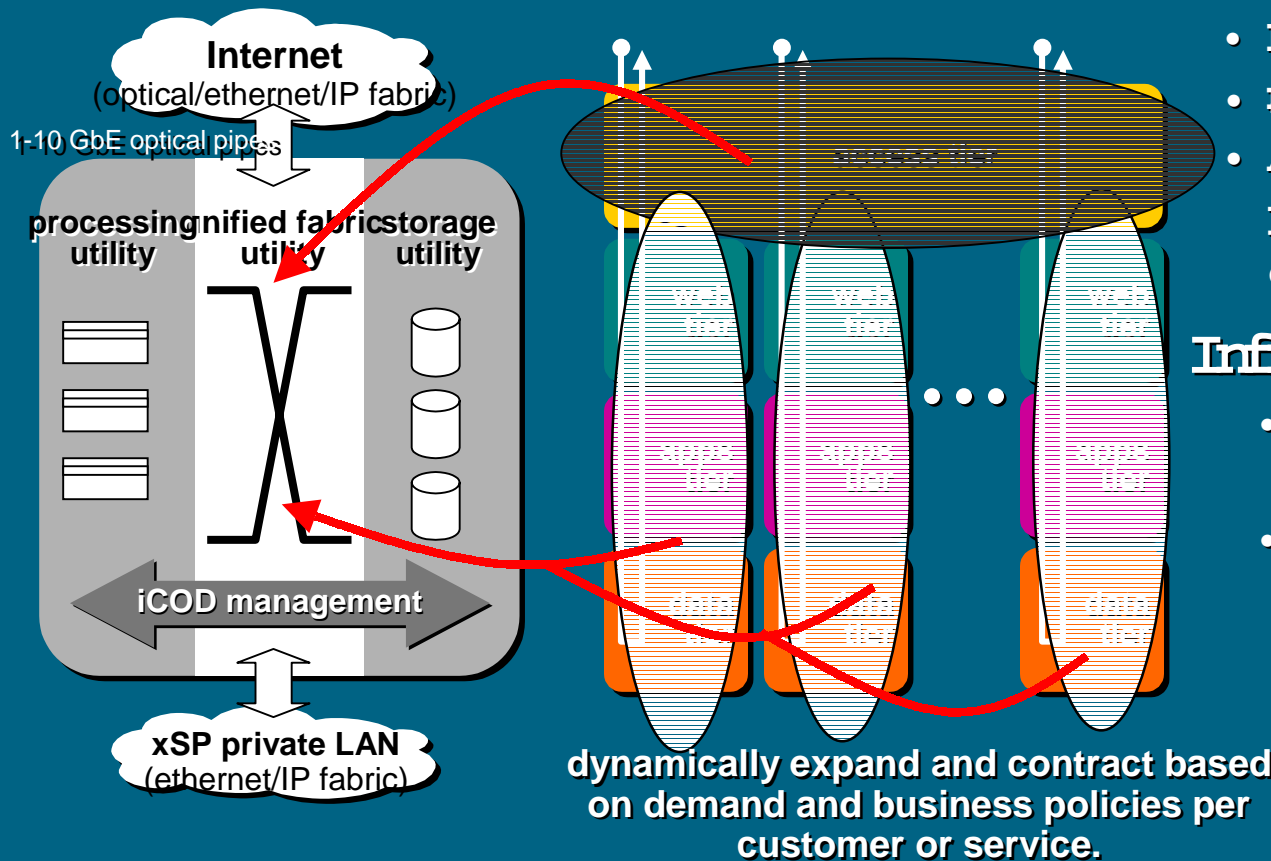
# iDC storage utility



# QoS in the NGDC

physical

logical



## Mini Data Centers

- Peak Usage Control
- Optimization of resources
- Differentiation/Isolation
- Signal Provisioning
- Auto-adjust with provisioning changes

## Infrastructure

- Managing shared access
- Yield Management

## Benefits of QoS and NGDC together

### Optimal Customer Experience



- ☑ **QoS:** Maintain business priorities with available resources during peak usage.
- ☑ **QoS:** Achieve optimal performance not just SLA conformance
- ☑ **NGDC:** Rapidly scale for fast growth and anticipated peaks
- ☑ **NGDC:** Increased reliability and availability

## Benefits of QoS and NGDC together

### Adapting to Economic Times



- ✓ **QoS:** Control the demand when business constraints do not allow build out.
- ✓ **QoS:** Increase utilization of resources
- ✓ **NGDC:** Reduce capital expenditures and liabilities by renting capacity
- ✓ **NGDC:** Reduce cost of ownership

**THANK YOU**



**i n v e n t**