NORTEL
NORTHERN TELECOM

Real-world Experience with Passport Network Consolidation

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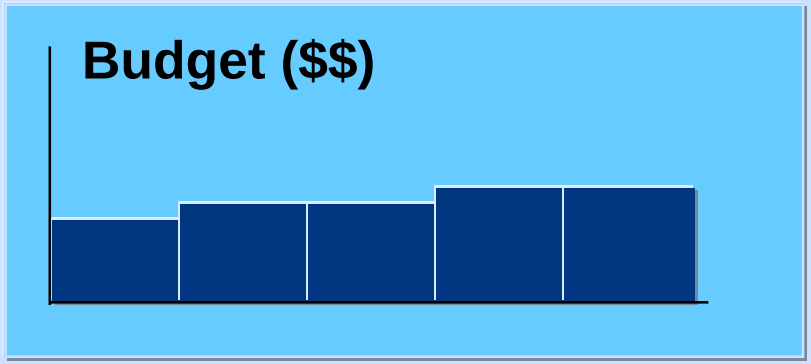
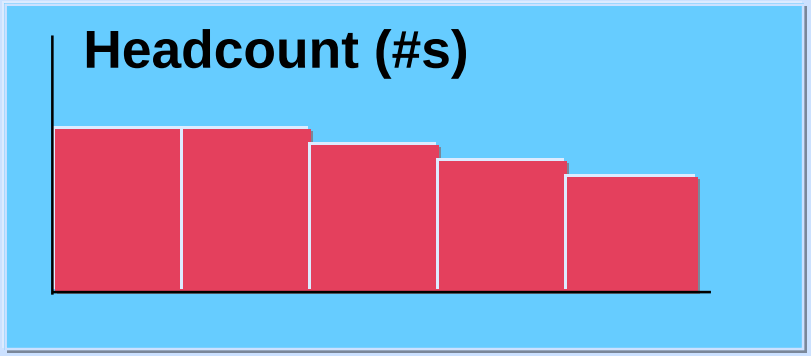
Agenda

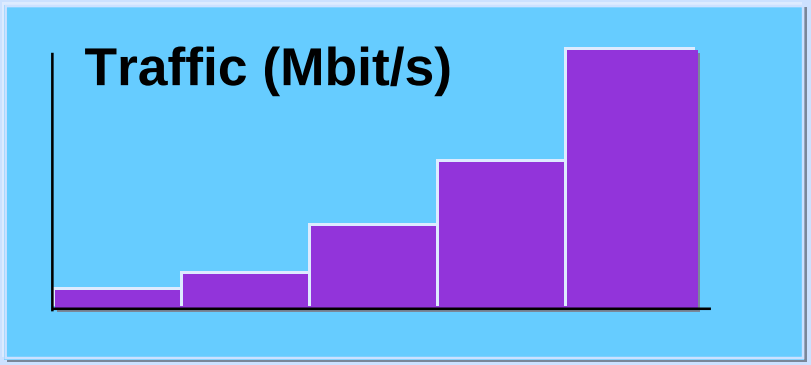
- **Today's Enterprise Network**
- **Passport -- the Nortel Solution**
- **Case Studies**

Passport – Helping you save money

Network Planners' Environment

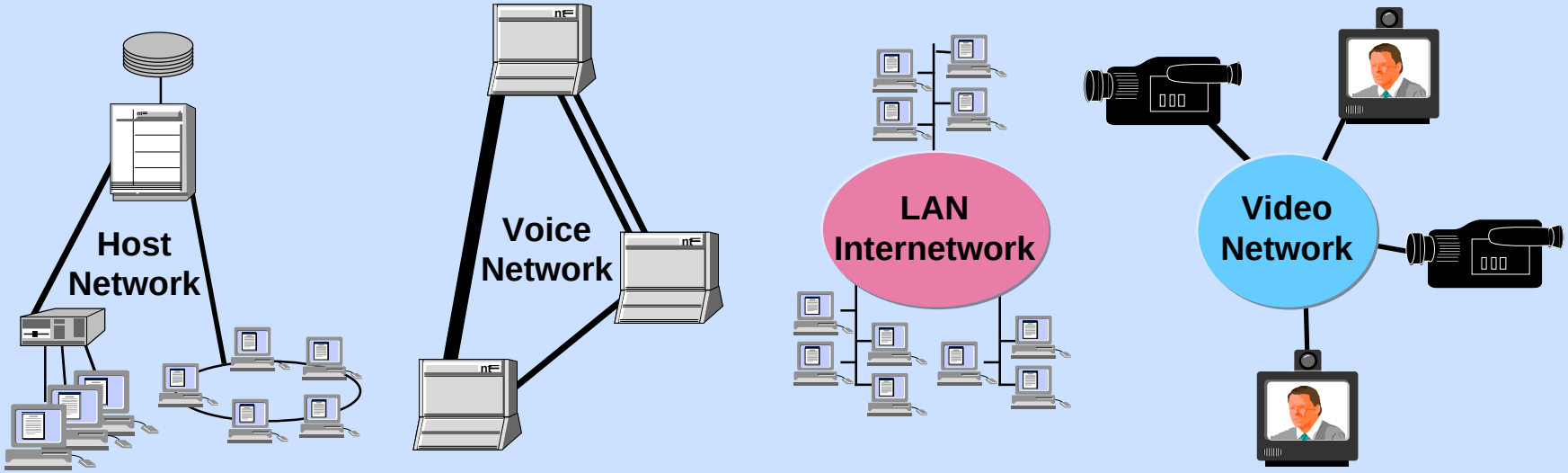






- Flat or nominal (6-8%) budget growth
- Maximize performance for a given budget
- Flat or reduced (4-6%) staffing
- Skill maintenance issues
- Exponential (25-30%) growth in applications traffic

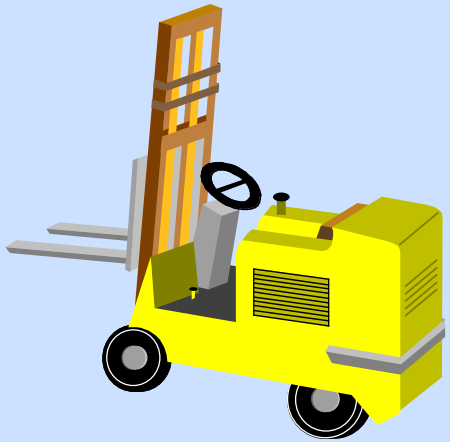
Network Proliferation



New applications = new networks
High complexity = high cost
Hidden costs are escalating

Planning for the Future

- **How to evolve to higher speeds?**
- **How to integrate small sites/remote users?**
- **How to exploit Asynchronous Transfer Mode (ATM) and frame relay services?**



Smooth evolution versus forklift upgrade

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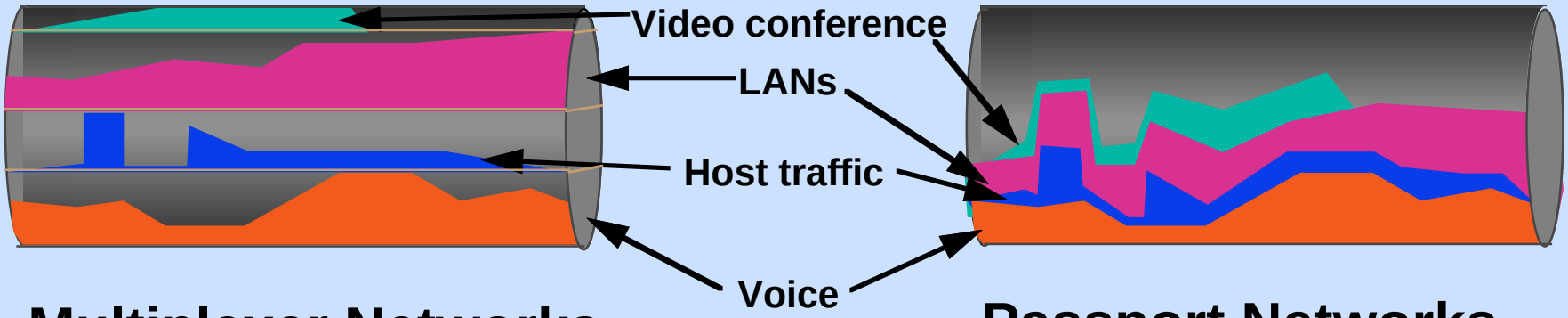
Relieving network stress

Dynamic Enterprise Networking



Multiplexer Networks

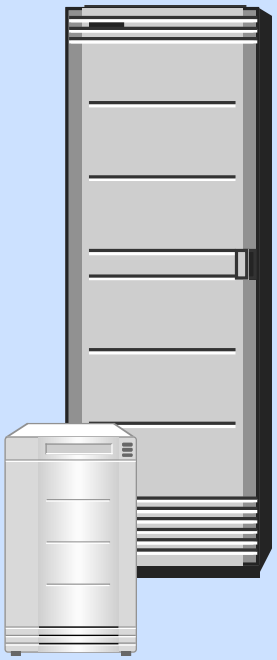
- T1 muxes connect voice switches
- Data “rides free”
- Bandwidth is assigned

Passport Networks

- Faster deployment time
- Up to 50% less cost
- 25-55% less bandwidth
- Lower delay
- Reduced complexity

Dynamic bandwidth management brings compelling economics

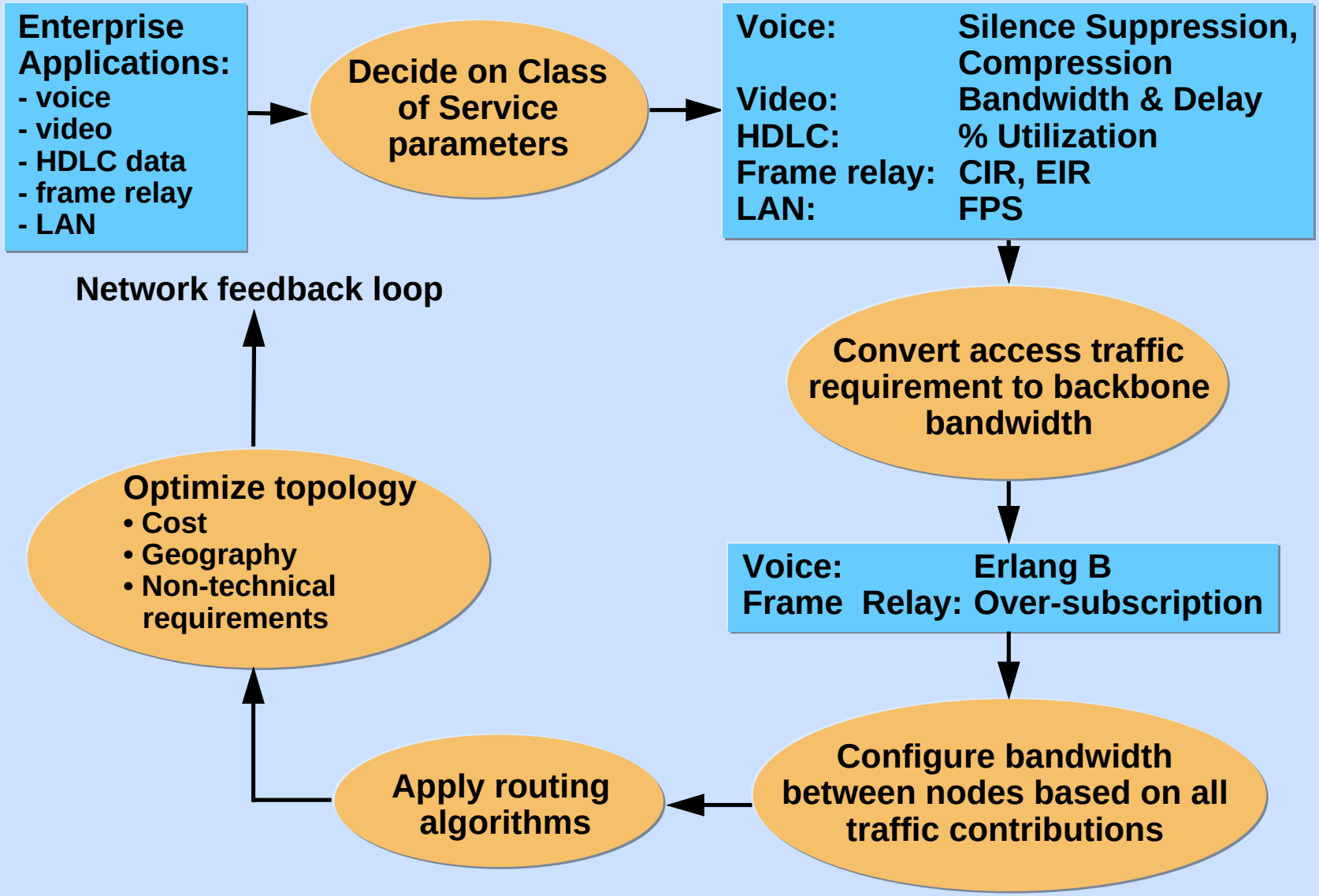
Magellan Passport



- **Enterprise network switch design**
  - multiprocessor ATM switch architecture
  - dynamic bandwidth management
  - Multiple Priority System™
  - optional frame/cell wideband trunking
- **Effective network operations**
  - faster application deployment time
  - a less complex network infrastructure
  - superior level of resource control
- **Technology ‘agility’**
  - support for existing applications
  - enabler for advanced multimedia applications

Dynamic flexibility in enterprise networking

Passport Backbone Engineering



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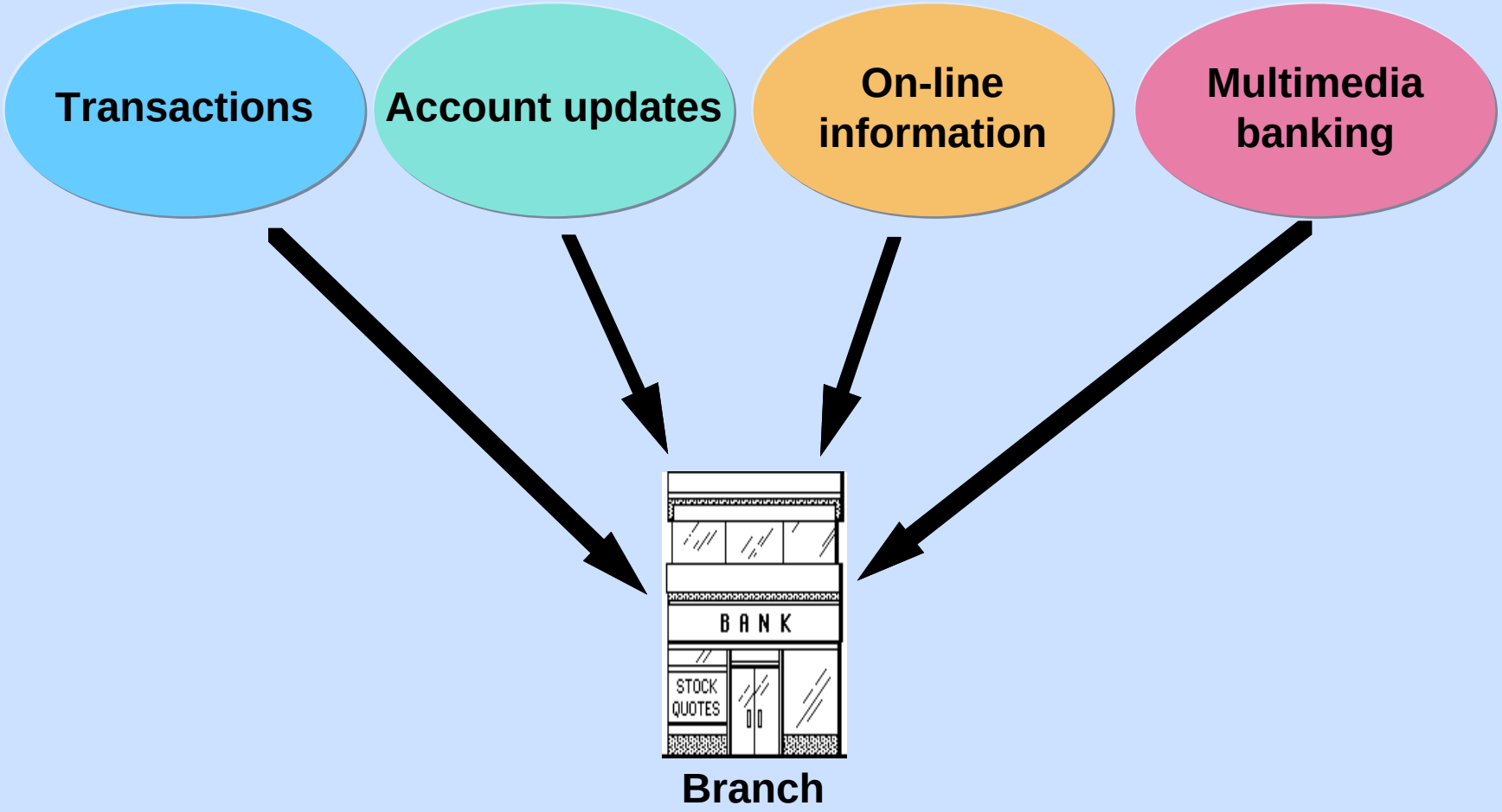
Real companies saving real ¥

The Fuji Bank Ltd.

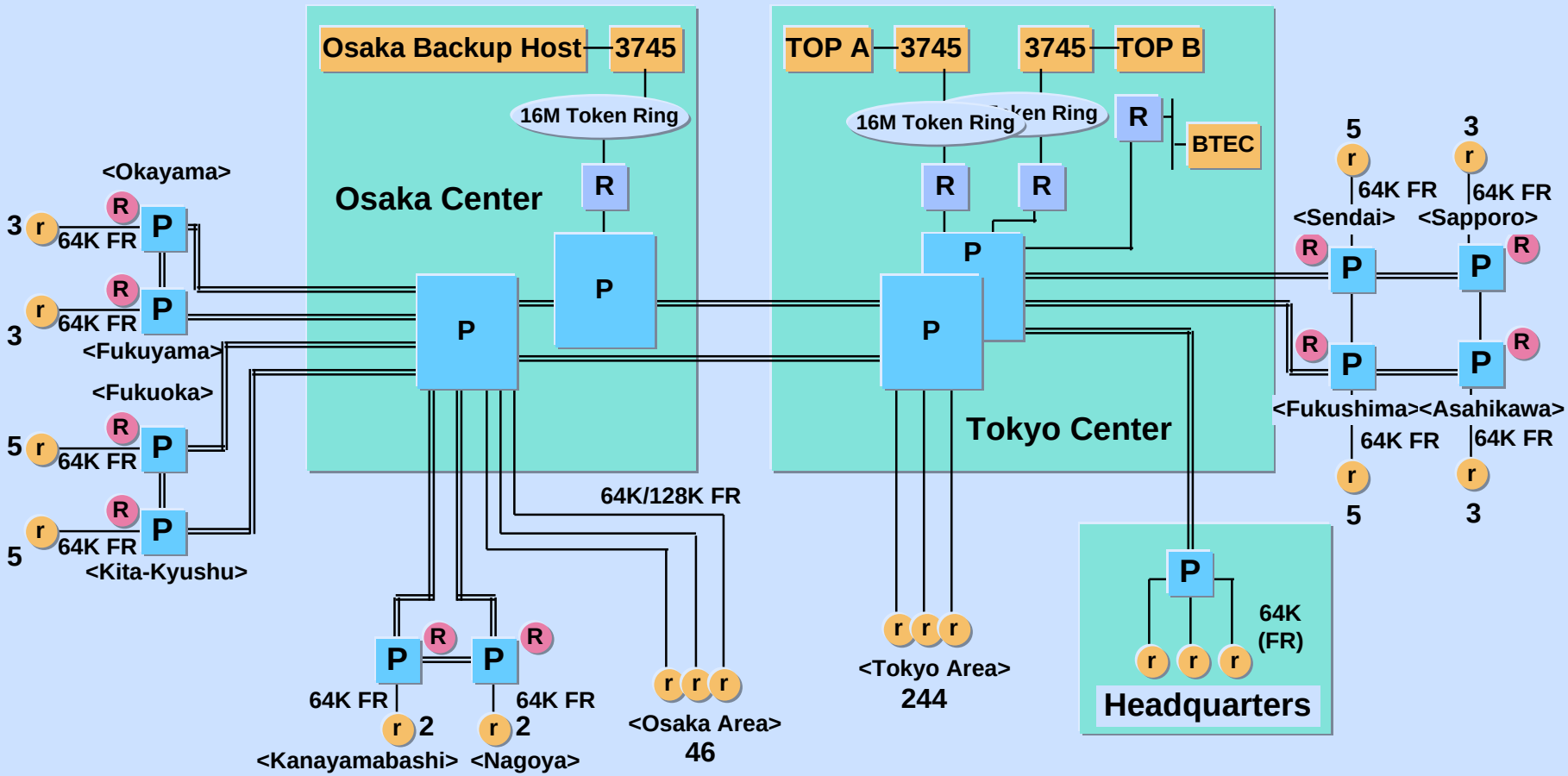
“Multimedia initiative”

- **Cost reduction**
- **Improve performance**
- **Any-to-any communication**
- **Increase reliability**
- **Multi-vendor environment**
- **Multimedia infrastructure**

Applications



Network Design Concept



- Redundant switches and routes
- Nationwide coverage

P : Magellan Passport
R : Central Router
R : Regional Router
r : Branch Router

Results So Far

- **Network deployment status**
  - 28 nodes installed to date
  - all phase 1 applications cut over
  - multimedia services in pilot stage
- **Positive feedback:**
  - multimedia services getting rave reviews
  - fast response time generating positive user response
  - exceeding reliability and performance targets
- **Now planning next steps:**
  - integration of voice/data/video/host traffic for second Tokyo data centre
  - wider rollout of multimedia services
  - trunk upgrade to ATM

Fulfilling the multimedia vision

Sanyo Electric Software Ltd.

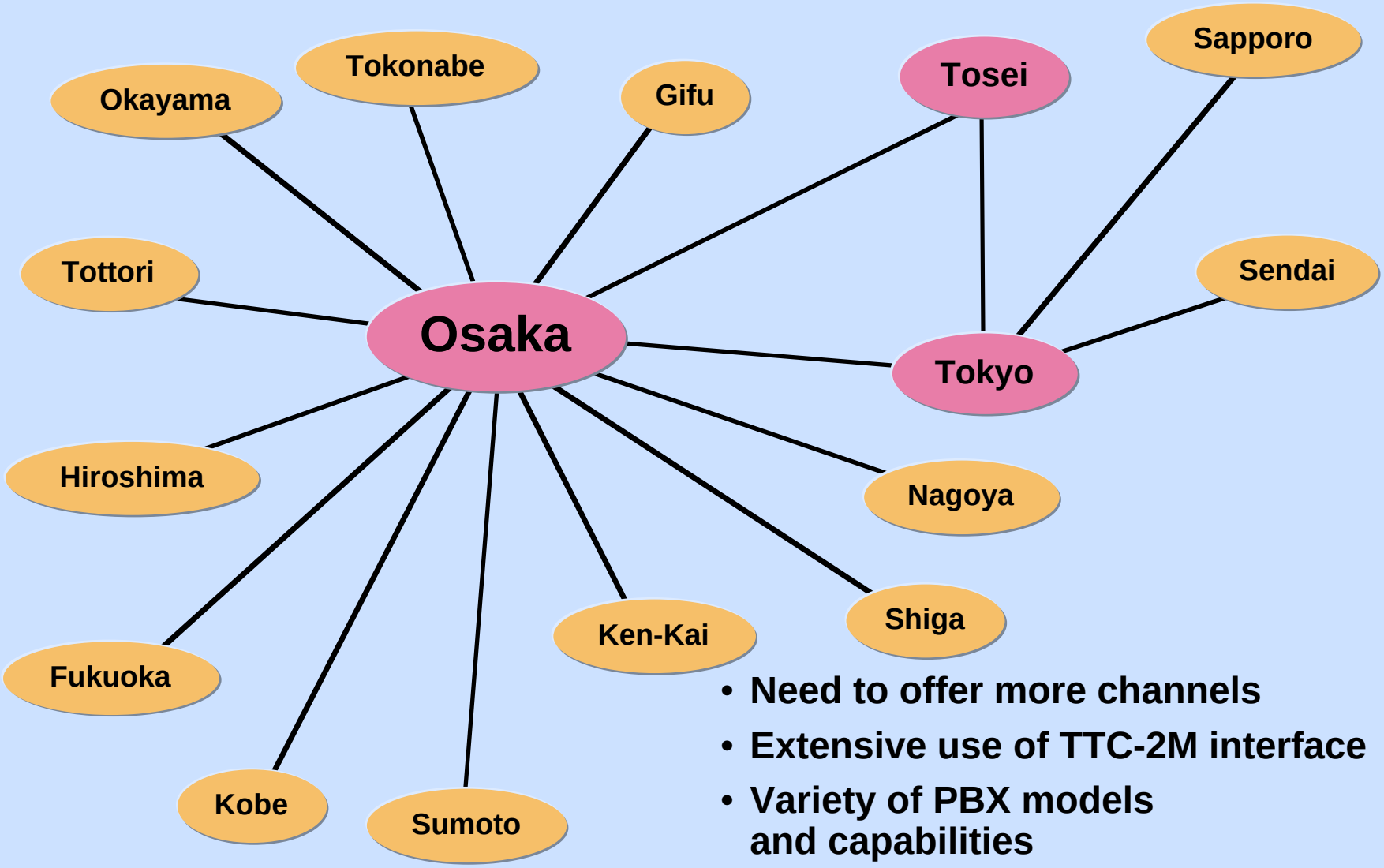
Networking issues

- Increasing circuit cost
- Inability to support multimedia
- Aging equipment/facilities
- Leverage revenue from network

ATM backbone project

- Support new services (public Internet access)
- Circuit cost reduction
- Voice hop-on/hop-off support
- Multimedia capability
- Integration of existing infrastructure

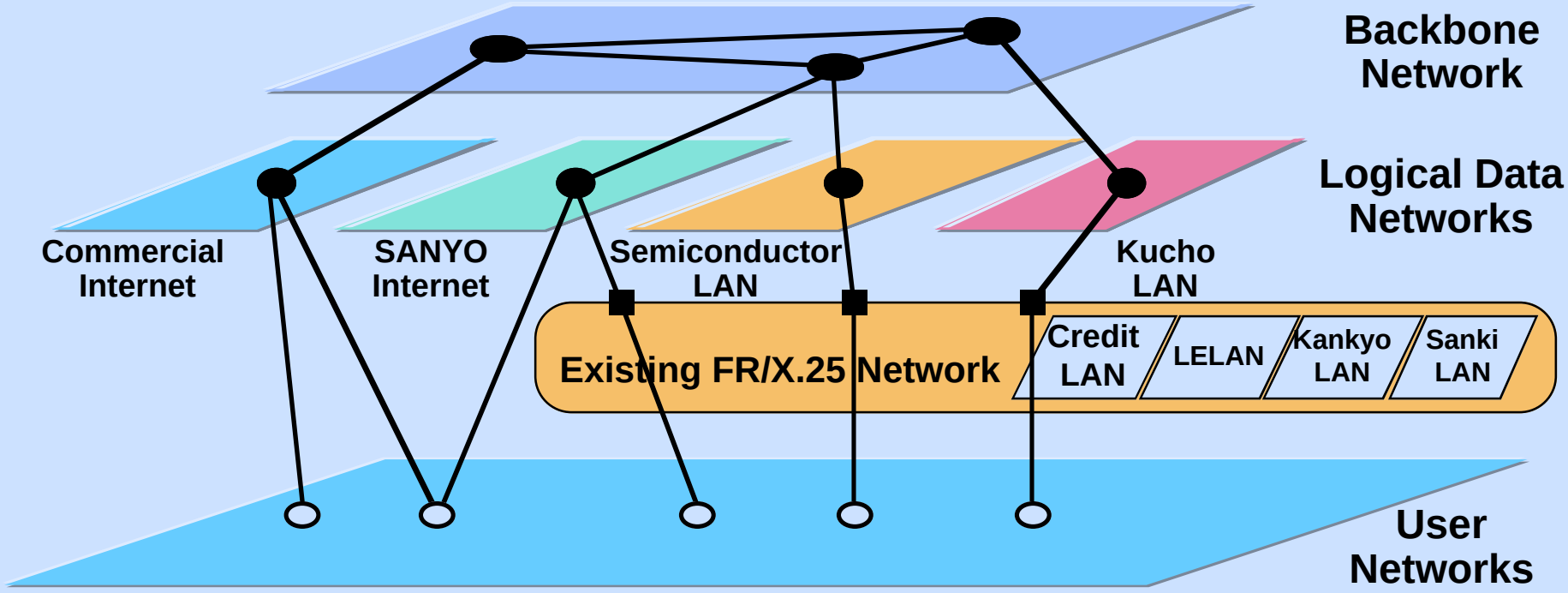
Voice Backbone Network



- Need to offer more channels
- Extensive use of TTC-2M interface
- Variety of PBX models and capabilities

Data Networks

- Four logical data networks operated over new backbone:
  - Commercial Internet service
  - SANYO Inter-network
  - Semiconductor Division LAN
  - Kucho System LAN
- IBM/NEC host-host links also incorporated
- Other networks to be integrated in future phases



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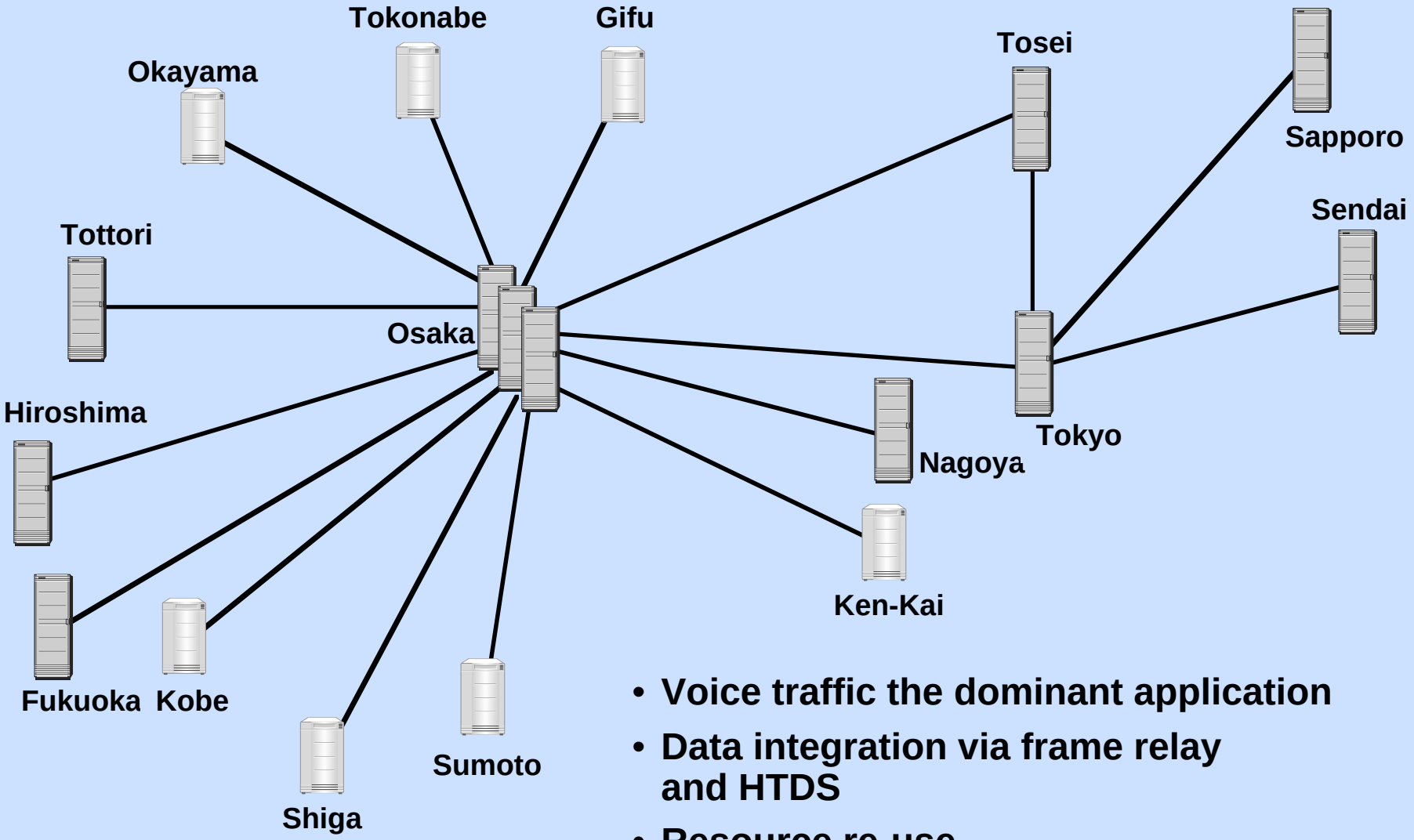

- Voice traffic the dominant application
- Data integration via frame relay and HTDS
- Resource re-use

Results So Far

- **Voice quality:**
  - challenging voice environment
  - issues resolved through in-depth analysis and tuning
- **Network results:**
  - new network enabled 50% increase in number of voice channels over the same bandwidth
  - avoided doubling of bandwidth to accomodate data traffic
  - favorable user feedback on improved response time for host-host traffic
- **Future steps:**
  - consolidation of more data networks
  - upgrade to private and/or public ATM trunks
  - roll-out of future multimedia applications

Positioned for the future

Conclusions

- **Enterprise network planners are facing greater challenges than ever before**
  - **budget <-> headcount <-> user squeeze**
  - **dynamic technologies and applications**
- **Magellan Passport can consolidate your networks**
  - **cost-effective platform for today's applications**
  - **leading edge technology for new applications**
- **Fuji Bank and Sanyo Electric are showing the way towards next-generation enterprise networking**

Passport -- the Enterprise solution