

# Research on Network Architecture for Photonic Network

## Photonic Network & Web Acceleration

For realizing high speed, large capacity, and high reliability network

### GROWTH OF ACCESS NETWORK & RICH CONTENTS

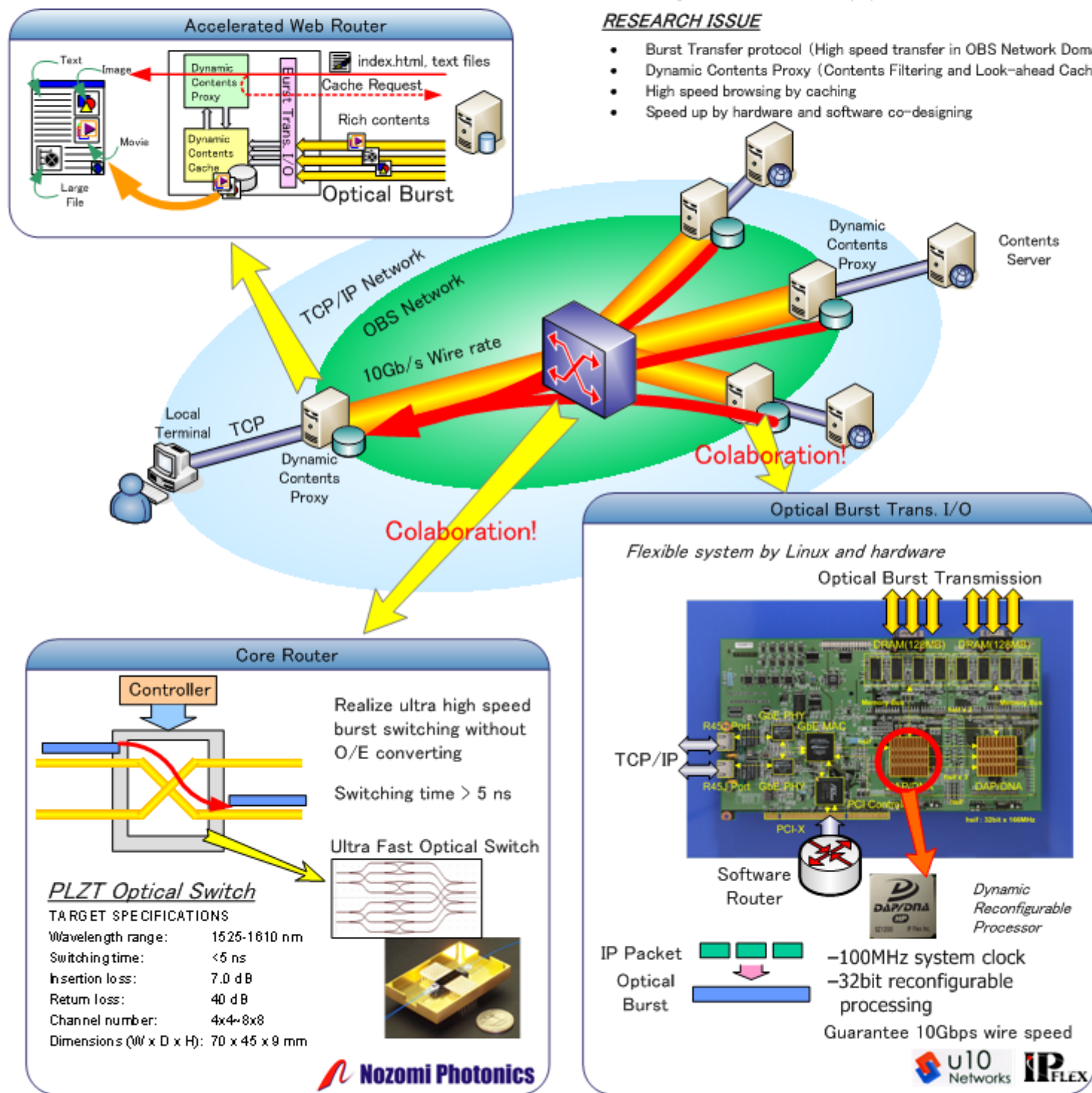
The conventional TCP/IP is not suitable for real time downloading and high quality video distribution.

### TRANSPARENT ACCESS TO RICH CONTENTS

Next generation web service realize real time and high quality video distribution  
Recognize the link to rich contents automatically in *Dynamic Contents Proxy*.  
Cache large contents transferred by optical burst transfer

### RESEARCH ISSUE

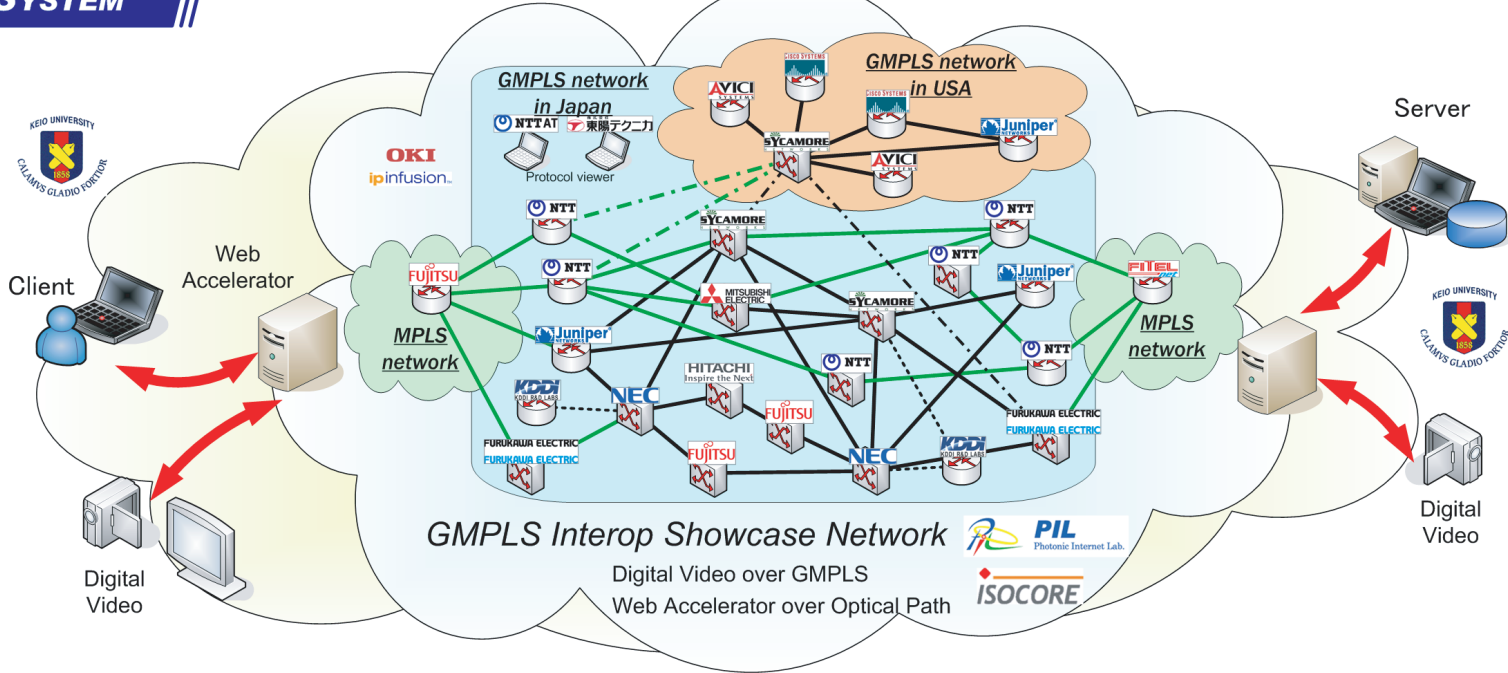
- Burst Transfer protocol (High speed transfer in OBS Network Domain)
- Dynamic Contents Proxy (Contents Filtering and Look-ahead Caching)
- High speed browsing by caching
- Speed up by hardware and software co-designing



More information, access to : [info@yamanaka.ics.keio.ac.jp](mailto:info@yamanaka.ics.keio.ac.jp)

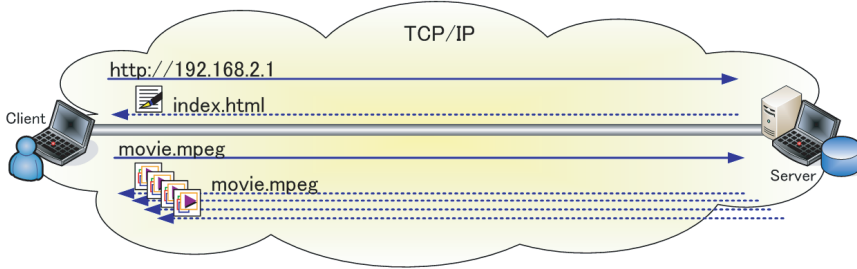
# GMPLS Application Network Experiment

## SYSTEM

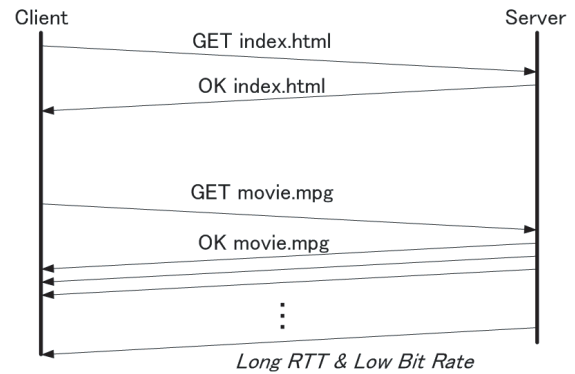


## EXPERIMENT

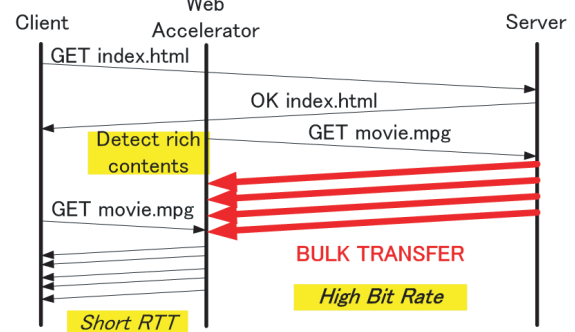
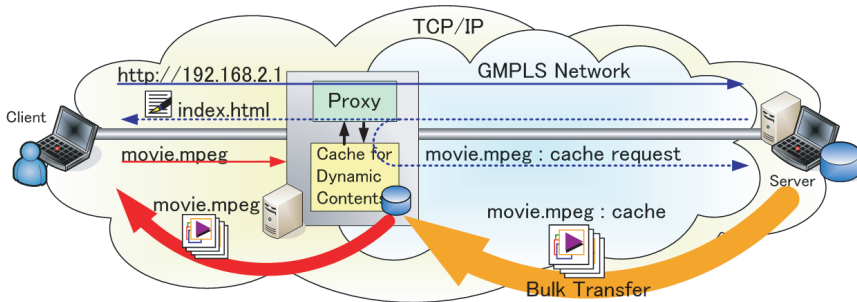
### Conventional TCP/IP Network



### COMMUNICATION PROCEDURE



### Accelerated Web Network



## RESULT

### TCP/IP

Need end-to-end delay for download huge contents  
 → Degrade performance inversely proportional RTT

### Accelerated Web Network

Cache the huge contents into Web Accelerator  
 → Improve the download time dramatically !!

Delay by network simulator = 10 ms, Download file size = 234 MB

