Managed Services - A Paradigm for Cloud-Based Business Continuity

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Agenda

This session is intended to expose key requirements for support of enterprise data backup activities as a Managed Service.

- What do we mean by backup as a Managed Service?
- User Benefits
- Challenges and enabling technologies
- Keys to Success

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Characteristics of backups as a managed service (BaaS)

- Still utilizes client-server architecture

- One or more elements of the backup solution live outside the company "firewall"
  – Poses additional security concerns
    – Even for a private cloud there is some exposure
- Generally involves web-based services, e.g:
  – Subscription to a backup service
  – Utilization of electronic data transfer to off-site DR storage
- Wide-Area networks are used
  - This is typically the major technological obstacle for Enterprise-class solutions

Typical Architectures

- Public Cloud
  - with local backup server sending data to cloud-based storage
  - with local backup clients sending data to cloud-hosted backup server

- Public-private Cloud
  - Private backup server
  - Some data copies (typically Disaster Recovery (DR) copy) sent to a public cloud storage service

- Cloud Management of Private Infrastructure

Customers benefit from simplified information management

- Simplified infrastructure management, usually via a web portal

- Offload one or more Continuity Management functions to an MSP, e.g.
  - Off-site DR data storage
  - Backup server management

- Reduce staff training and infrastructure maintenance expense

- Simplify Capacity Planning (for backups, at least) to a simple fee-for-service

- Take better advantage of on-demand efficiencies

- Shift Service Level Management to a contractual, rather than technological, issue.

Data Security Poses a Challenge

- Data security is about preventing unauthorized data access. The Cloud exposes organization data
  - If a public cloud is used, the backed-up data is outside the owning organization's control
  - Once outside the firewall, data packets can be intercepted during transmission
    - The same concern exists for tape media traditionally used for off-site (DR) data copies, so this is not entirely a new risk

  - "Agentless" means "Well-Known" (to you AND attackers)
    - Keep this in mind when evaluating backup technologies

  - Geography may be important (different laws in different countries)

- The enabling technology is data encryption
  - Utilize encryption (selectively) for sensitive data sent to (or through) public facilities
    - Ideally, this should be a built-in capability of your backup software

Data Protection Concerns

- Data protection is about ensuring that data is not lost or corrupted. Use of an MSP does NOT eliminate the typical concerns, it merely makes them the responsibility of the MSP:
    - Hardware failures
    - Media degradation/failure
    - Facility Disasters
    - Migration of data from obsolete technology
- Add to these concerns the risks inherent in outsourcing critical functions to another company.
- The successful MSP will utilize technology and an architecture that fully protects the client data (including protection from a disaster to the MSP's primary storage site)

Network Bandwidth

- WAN networks re-introduce concerns for backup or DR windows that largely disappeared with the introduction of GB+ LAN/SAN capabilities.

- As with traditional LAN/SAN-based architectures, full DR restorations present the biggest challenge
  - The problem can be insidious with backup software using continuous incremental backup approach
  - Tends to drive large enterprise implementations to local primary backup, with DR copy in the cloud

- A combination of technology and management strategies are needed to deal with this issue

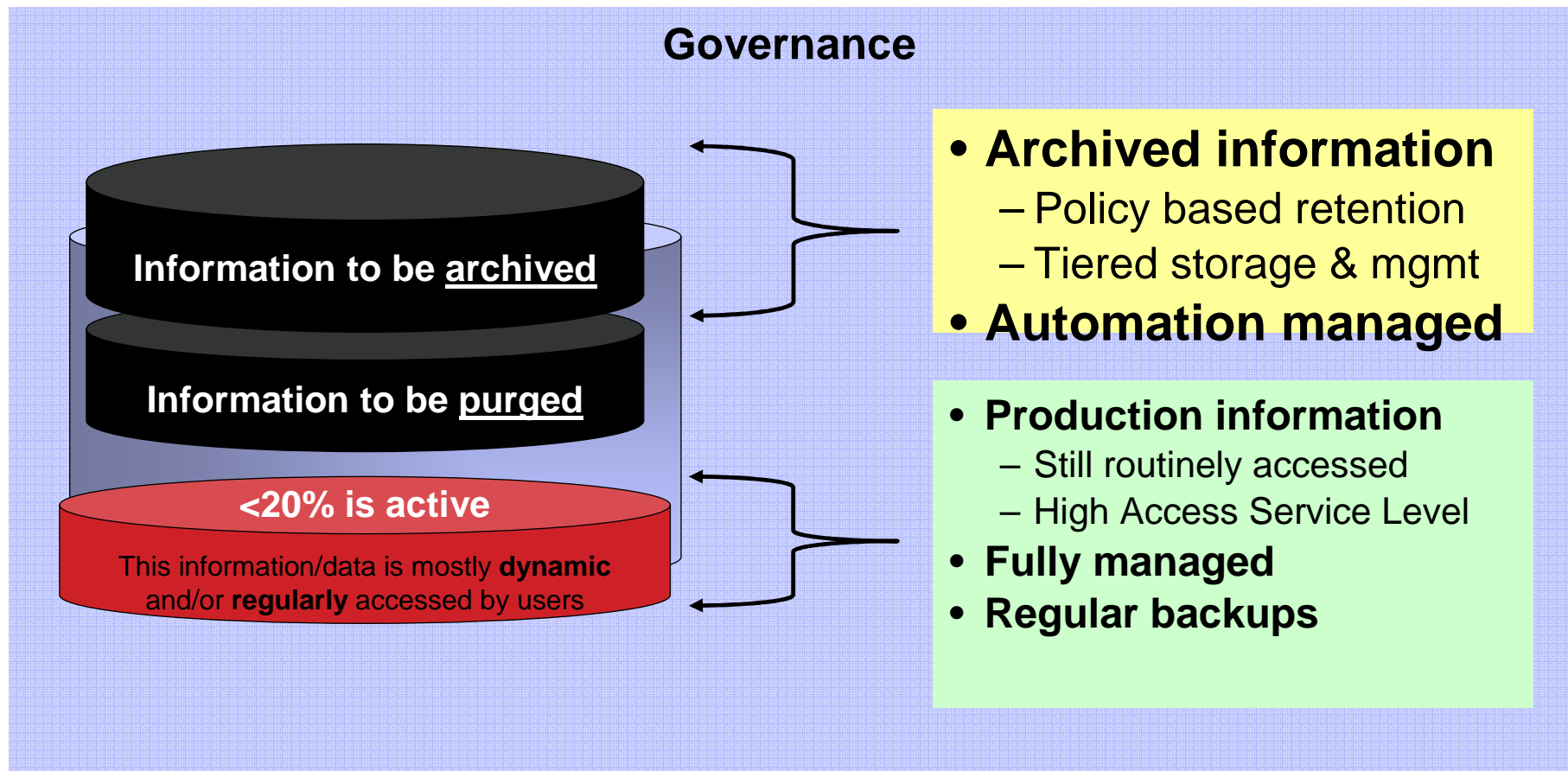# Network Utilization Strategies

- Use Continuous Data Protection
  - Technology continuously backs up changes (file or block level) rather than doing periodic system-wide backup
- Use block-level (subfile) backup technology
- Use Network Accelerators
- Have a prioritized DR plan
- Use Information Lifecycle Management (ILM) to reduce the DR problem
  - If you don't need it, delete it
  - If you might need it later, archive it (and delete from local storage)

Data becomes inactive or obsolete

- Typically, only 20% of the information is active
- Of the remaining 80%, some is inactive, some is obsolete

Governance

Information to be <u>archived</u>

Information to be <u>purged</u>

<20% is active

This information/data is mostly **dynamic** and/or **regularly** accessed by users

- **Archived information**
  - Policy based retention
  - Tiered storage & mgmt
- **Automation managed**

- **Production information**
  - Still routinely accessed
  - High Access Service Level
- **Fully managed**
- **Regular backups**

Network Bandwidth Acceleration

- The concept of network acceleration is that by a combination of buffering and compression technologies the true network load can be reduced, and spikes leveled, resulting in a higher apparent bandwidth
  - Data Compression
    - Object compression
    - Single Instance Store (SIS)
    - Deduplication
  - Network Accelerator Appliances
    - Either real or virtual implementations available
    - Typically a combination of local buffering and deduplication
    - Different "presentations", e.g. network share, IP address, etc.

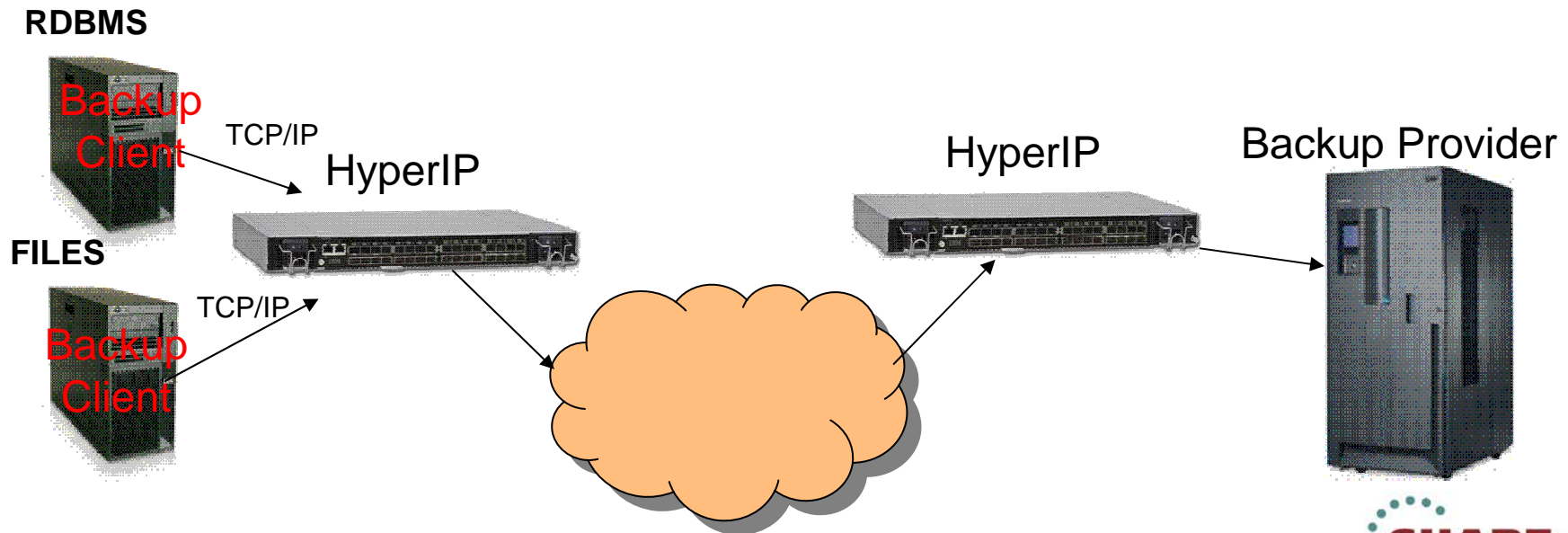 - NOTE: These may, or may not, help much with restores—depends on how they cache chunks to reconstruct objects

Network Accelerator: Riverbed "Whitewater"

- CIFS/NFS access by the Backup <u>Server</u>
- Appliance (real or virtual versions available)
- Ready for Tivoli Validated for use with Tivoli Storage Manager (TSM)
  - https://www-304.ibm.com/software/brandcatalog/ismlibrary/details?catalog.label=1TW10SM39
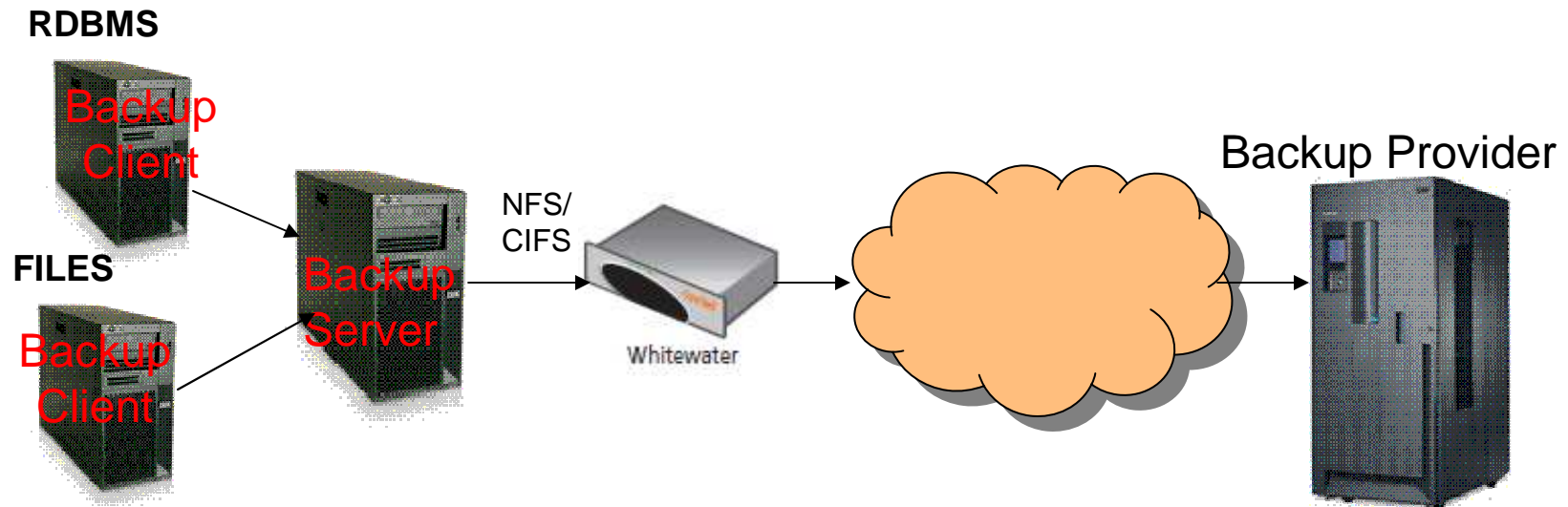
Network Accelerator: Network Executive HyperIP

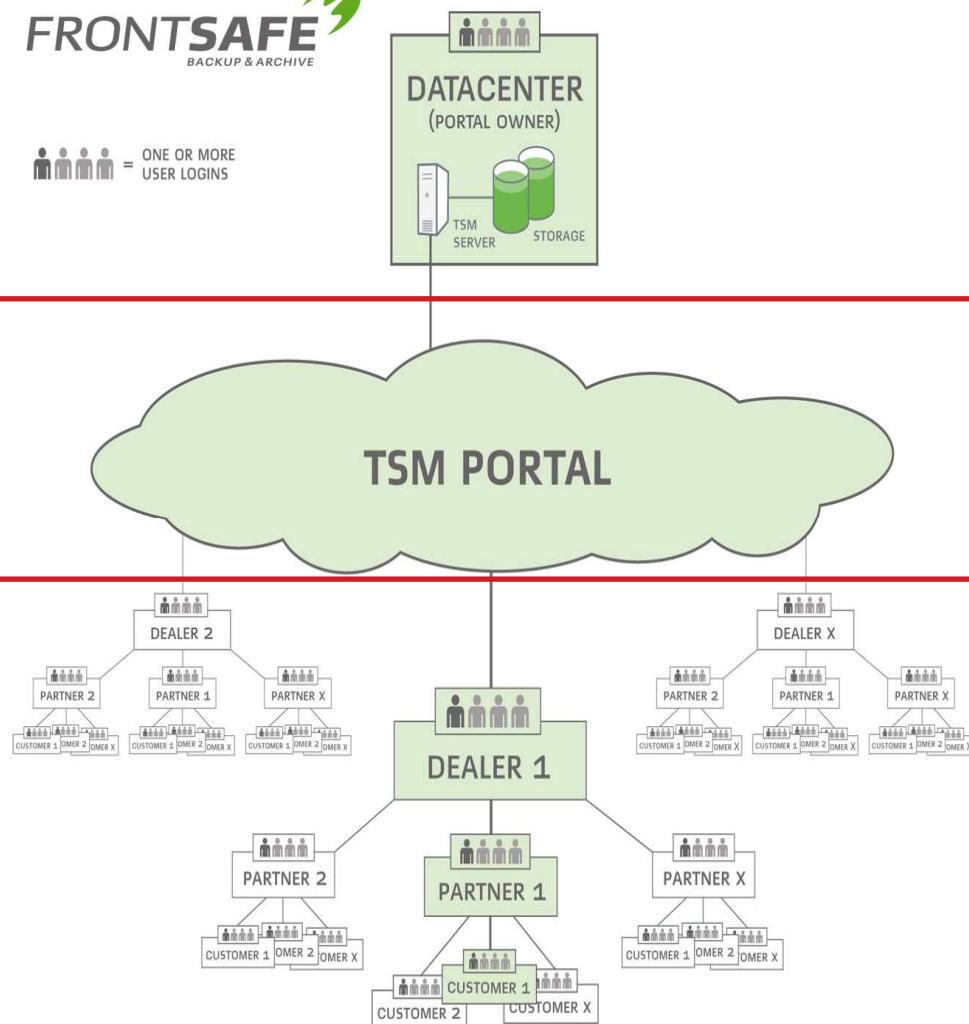- TCP/IP access by the Backup Client
- Virtual Device
- Ready for Tivoli Validated for use with TSM:
  - https://www-304.ibm.com/software/brandcatalog/ismlibrary/details?catalog.label=1TW10SM44
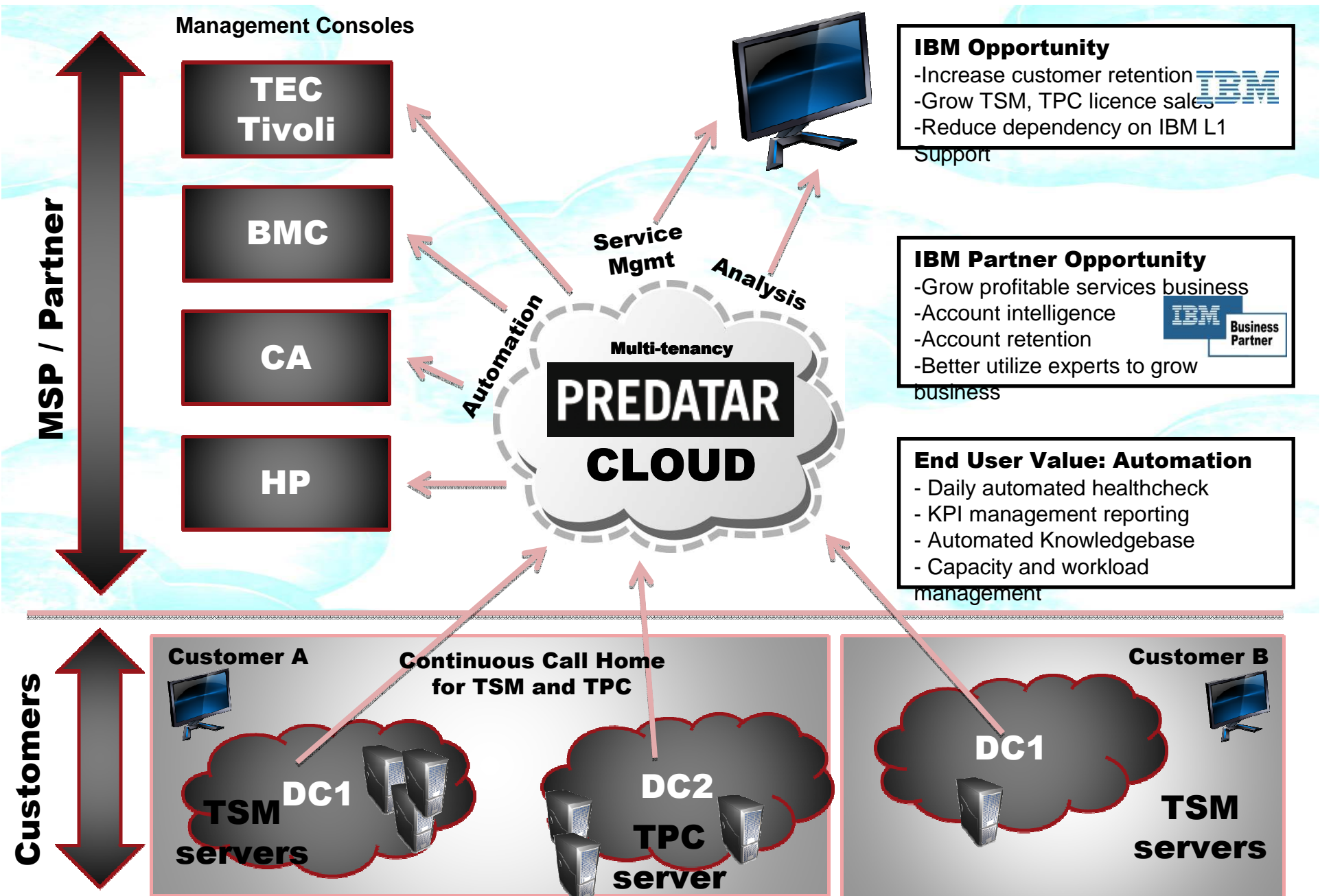
Front-safe TSM Portal

- The TSM Portal enables a cloud distribution model that allows the Datacenter (Portal Owner) to deliver their TSM infrastructure to end customers via a cloud service
- (10's in each geography)

- The Portal Owner can sign up one or more Dealers (think VAD)
- Each Dealer can sign up one or more Partners (think VAR)
- (100's in each geography)

- Portal Owners, Dealers and/or Partners can sign up end customers
- (1000's in each geography)

https://www-304.ibm.com/software/brandcatalog/ismlibrary/details?catalog.label=1TW10SM45

Management Consoles

MSP / Partner

TEC Tivoli

BMC

CA

HP

Service Mgmt

Analysis

Automation

Multi-tenancy

PREDATAR

CLOUD

IBM Opportunity
-Increase customer retention
-Grow TSM, TPC licence sales
-Reduce dependency on IBM L1 Support

IBM

IBM Partner Opportunity
-Grow profitable services business
-Account intelligence
-Account retention
-Better utilize experts to grow business

IBM Business Partner

End User Value: Automation
- Daily automated healthcheck
- KPI management reporting
- Automated Knowledgebase
- Capacity and workload management

Customers

Customer A

Continuous Call Home for TSM and TPC

Customer B

DC1

TSM servers

DC2

TPC server

DC1

TSM servers

Keys to BaaS User Success

- Know what Service Levels you need when you approach candidate vendors
  - Backup and restore times
  - The amount of data, its change characteristics, and number of versions you will want to retain
- Evaluate the Vendor
  - Examine their financial situation as if your company's survival depends on it (it might!)
  - Disaster Recovery
    - Are they prepared for a disaster at their own facility
    - What is their Recovery Point capability?
    - Can they provide DR hot site facilities?
  - Do the actual facilities measure up, and where are they?
    - If possible, a site visit is recommended.
  - Data Security
    - Is data encrypted, and protected from unauthorized access?

Keys to MSP Success

- Choose software tools that support the essential enabling technologies, e.g. encryption, replication, etc.
- Have a solid knowledge foundation in your chosen backup software.
  - Your customer will expect you to be the expert in this area.
  - Some architectures will require you to do the deployment
- Decide on your target market, and deploy an architecture appropriate to that market. One size most assuredly DOES NOT fit all
- Consider offering "hot-site" recovery services
- Consider including ILM support
- Understand each customer's required service levels, be realistic about your capabilities, document the service level agreements, and finally – TEST!

IBM Support Programs

- IBM Backed Up By Tivoli Program
  - Subcategory under Ready for Tivoli
  - Validated Solutions Listed in Integrated Service Management Library
  - https://www-304.ibm.com/software/brandcatalog/ismlibrary/search#rc=BackedUpByTSM

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