Disaster Recovery and High Availability Solutions

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Business Continuity Activities

• Globally
  – CSC has a team of over 95 business continuity professionals, with teams in America, EMEA and Asia/pacific.
  – 300+ Contingency exercises per annum
  – Full range of Business Continuity Services

• Client Base
  • Consists of Insurance and Financial companies
  • Retail
  • Industrial
  • Manufacturing
  • Mining
  • Federal and State Government agencies
  • Utilities companies
  • Logistics Companies
Trends

Availability
Higher Utilisation of Infrastructure
Reduction of Risk
Regulatory Req’s
Data Centre Rationalisation
ITIL
Green IT

Infrastructure Costs
Network Costs
Data Centre Space
Manual Processes
Whole of Site DR strategies
### Competing Priorities for Funding

#### Production Controls
- Mature BCM
- Geographically dispersed support.
- Strong Operational model (ITIL or equivalent)
- Full production redundancy
- Electronic Transfer of Data to Alternate site
- New IT Infrastructure
- Facilities Maintenance Regime
- Purpose Built Tier 3 Data Centre
- Highly Secure Site
- Backup Regime
- Onsite Facilities support
- Low Risk location of facility

#### Disaster Recovery Options
- Dual Live Sites (Clustered)
  - Replicated Data
  - Dedicated Standby infrastructure
- Replicated Data
  - Dedicated Dormant Standby Infrastructure
- Replicated Data
  - Leveraged server pool.
- Leveraged/Shared environment.
- Backup data shipped to site.
- Cold Site

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**Cost**
Probability Assessment – The forgotten link

BIA Results
- System A <2 hrs
- System A <4 hrs
- System A <12 hrs
- System A <24 hrs
- System A <48 hrs
- System A <72 hrs

Risk and Probability assessment
- Site Risks
- System Risks
- Operational Risks

Recovery Categories
- Category 1 < 4hrs
- Category 2 < 24 hrs
- Category 3 < 72 hrs

Recovery Solutions
- Clustered Solution
- Replicated Solution
- Tape Based Solution
Operational Risk Assessment Components

- **Site Risks**
  - Location
  - Design
  - Infrastructure
  - Operational Controls

- **System Risks**
  - Age/Type
  - Resilience
  - Data Backup

- **Operational Risks**
  - Service Location
  - Remote Support
  - Operational support model/Methodology (ITIL)
  - Business Continuity and Risk Management
• These assessment components coupled with a review of the organisation’s Data Centre Strategy need to be the cornerstone of the business case supporting your Disaster Recovery Strategy.
• Addressing these risks and probabilities will help drive the business case and determine the convergence point between Service Continuity and availability. This will in turn help determine the appropriate recovery strategy.
• What are some the outcomes from these assessments across our client base?
• What are we seeing across our client base?
• We typically split our clients for DR strategies into 2 broad categories: Financial and non-financial industries.

• **Non-financial**
  - Focus is on production availability
  - The higher the spend on the Production controls (either by CSC or the client), the lower the spend on DR and more on same site availability.
  - Lack of Industry regulations has up until recently allowed this type of risk to be acceptable. We are seeing an increase in the amount of data being requested for audits to support this position and a demand for more production controls.
  - We are however starting to see a change in this risk strategy.
  - Utilities providers, B2B systems and high risk/high impact areas such as Healthcare and Emergency Services are now starting adopt similar strategies to banking and financial institutions.

• **Financial**
  - Tend to have a more balanced approach to recovery options and most of our client base has very high levels of recovery capability typically <12 hrs.
  - Detailed assessments of provider capabilities including all operational aspects are required and many are using this data for a more granular approach to service continuity and availability provisioning.
  - Instead of looking at DR as a secondary component of a new system, many are now looking at the convergence of service continuity and availability to provide a HA DR solution as part of a holistic design up front.
Data Centre Options

Where data centre options are limited, clients are using HA DR solutions to address the availability and risk requirements as the most cost effective option.

- Data Centre options are not always readily available to some organisations, while other chose to use sub-optimal facilities due to cost constraints. Where one site is of lesser capability, this is normally used for DR.

- ITIL changes the terminology and focus from Disaster Recovery to Service Continuity. The flow on effect is that we are seeing a focus on production availability instead of disaster recovery.
New Direction - Increase Spend on HA in prod and decrease DR capability

- Data Centre is highly fault tolerant, high security and well maintained
- Geographically stable area
- Not subject to civil/social risks and other tenant impacts
- Sound Operational support model (ITIL aligned) for quick and effective remediation of any potential threats and impacts.

Business drivers
- Cost effective
- Meets minimal green credentials
- Meet regulatory compliance
- Maintain security and integrity of data.

Likely Outcome
- High level of same site redundancy for the production systems
- Maintain DR at a minimal level.
  - Data replicated offsite
  - “warm” DR solution with 24-48hr recovery.

Benefits
- Reduced DR costs
- Effective use of resources in day to day business
- Increased production availability

Downside
- Increased risk if whole of site Disaster occurs.
- Higher impact for whole of site Disaster
- Not suitable to all businesses and industry
HA Environments for Scalable Resiliency

Corporate Critical

Window: VMware for Failover
Linux: VMware for Failover
UNIX: Clusters

HA Systems

- Trading Systems
- B2B Systems
- Workflow and messaging Systems
- Health Systems
- Logistics Systems
- Gov’t critical supplier systems

EMC VTL Appliance

Prod

DR Copy

BCC test copy

EMC VTL Appliance
• Workflow and messaging. This is one of the main areas where we expect to see more HA deployments. VM environments for exchange and takeup of cloud offerings.

• Technologies
  – Oracle DataGard
  – Clustering
  – VMWare
  – DB2 HA DR
  – Echo2 for AS/400’s
  – SAN and NAS replication

• Health
  – NHS
  – Life and Death decisions regarding patient treatment. Reduction in manual processes makes these systems extremely critical

• When choosing a strategy – stick to it

• If you need a HA solution – design a HA solution. Use of test/dev for this will not be effective. Whole of site strategy will need to be revisited.
High Availability Models

• Pro’s
  – Beneficial where Data Centre options are limited
  – Production Availability improvements as well as DR
  – Provides Flexibility for critical systems
  – Increase utilisation potential for DR infrastructure
  – Essential for high impact and critical systems

• Con’s
  – Increased complexity
  – Increased costs
    • Software
    • Hardware
    • Network
    • Facilities
  – Green IT impact
    – Increases the amount of live infrastructure.
  – DR Testing limitations
HA Growth factors and Limitations

**Growth Factors**
- IT Infrastructure and Network cost reductions
- Virtualisation
- Cloud Computing
- Data Centre rationalisation
- Mature replication/clustering tools
- Risk Management Tools to aid assessment and business case

**Limitations**
- Empirical Data for Probability assessment
- Time & Budget for detailed assessments
- Data Centre options
- Cloud Transparency
- DR testing and validation in the cloud