

# Virtualisation: a quiet revolution

...the City of West Torrens experience

...a game changing technology

# What business systems do we use ?

People, Property, Assets plus ...

Animal mgmt, Document management, email, Finance, GIS, Helpdesk, HR, Infringements, Internet, IT Network, Library, Medical, Performance Management, Printing, Office, Rostering, Telephony, Web media, ...

## How many physical computers do we need to run them ?

in 2006: 24+

in 2009: 2+



# Situation Analysis – 2006/2007

**CEO: “address our disaster recovery”**



**IT: tinkering with a new technology**

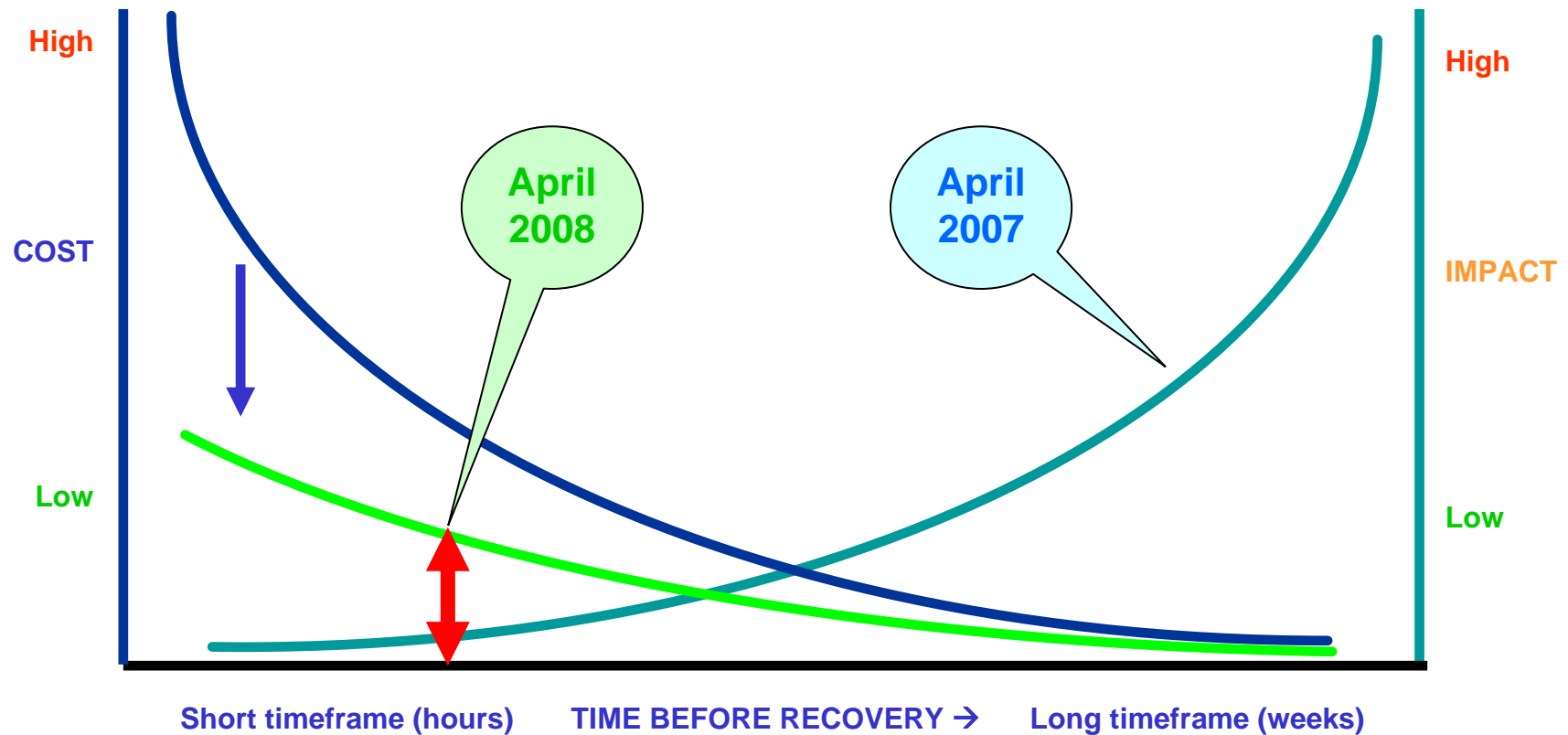
**Potential to ..**

- improve server management**
- business continuity and disaster recovery**
- reduce our hardware spend by over 50%**
- extend the life of the data centre**
- pay for itself in less than 2 years**
- reduce desktop power consumption by 80%**

# State of Disaster Recovery (after virtualisation)

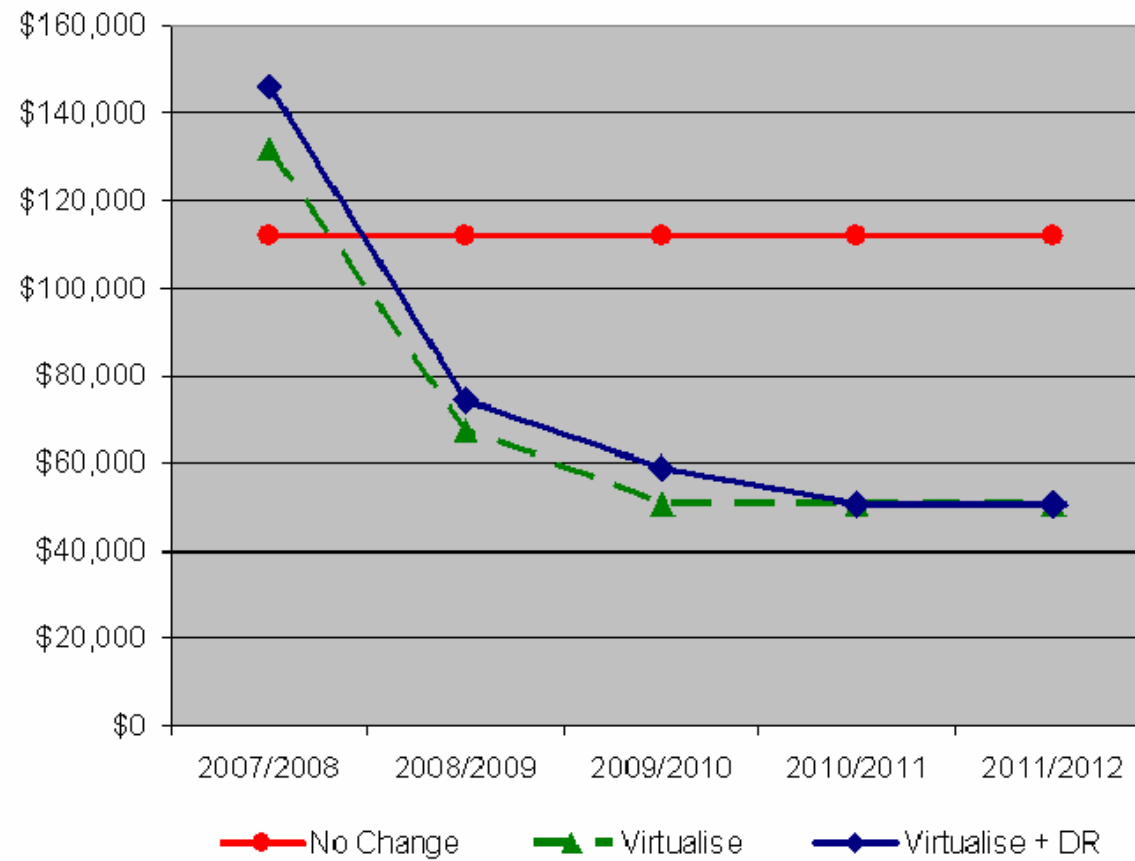
COST OF COUNTER MEASURES

IMPACT TO THE BUSINESS



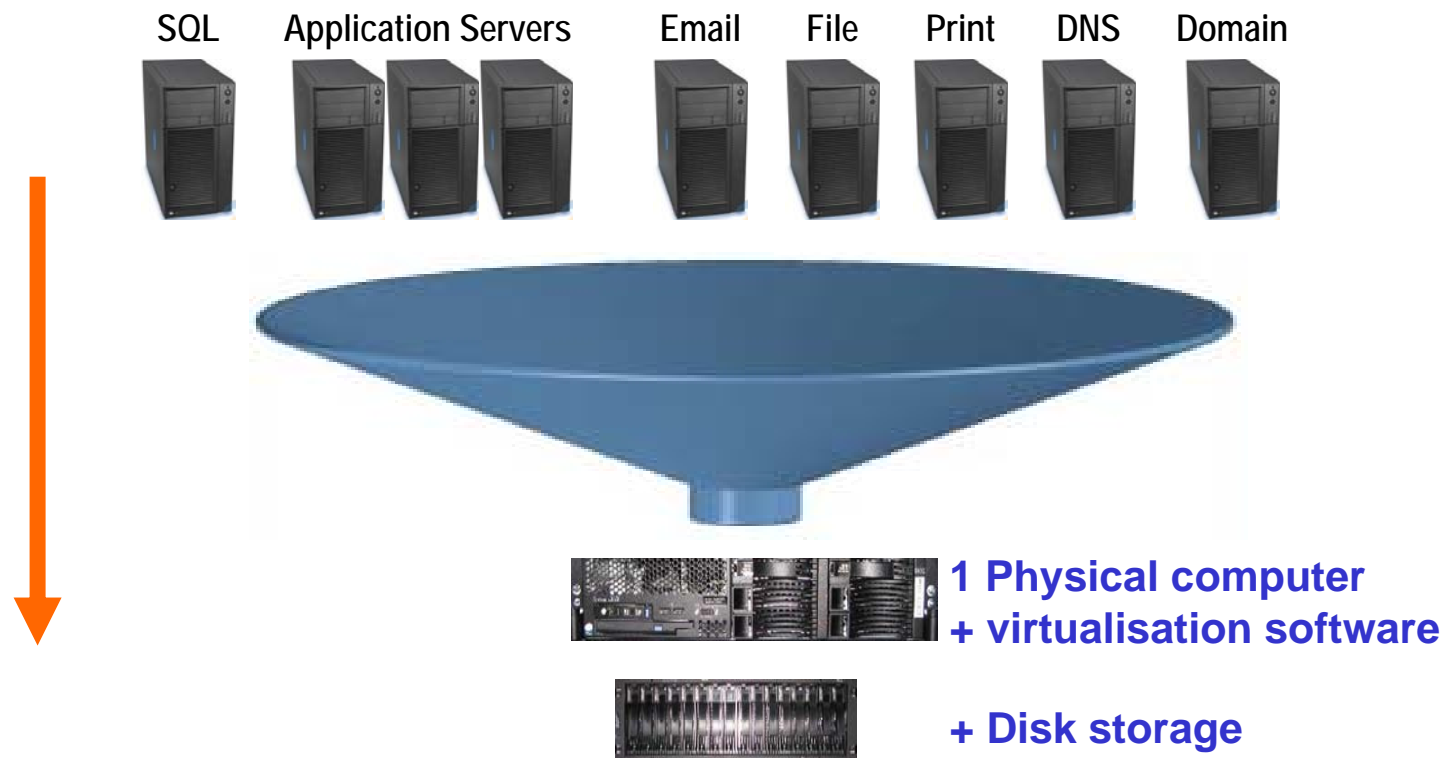
# CoWT: hardware costs

Approximate Server Lease Costs

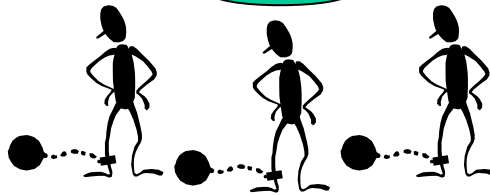
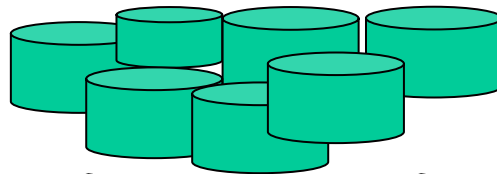
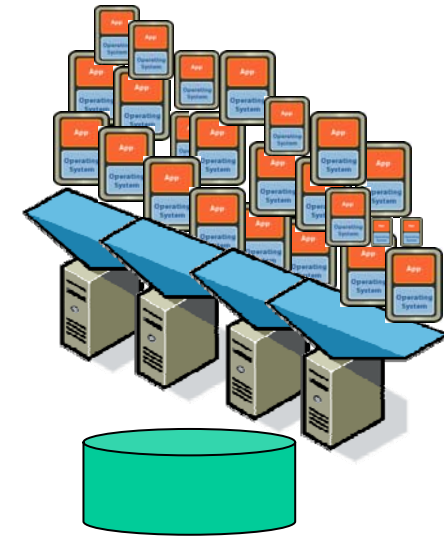
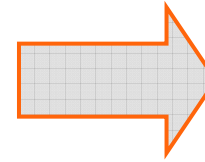
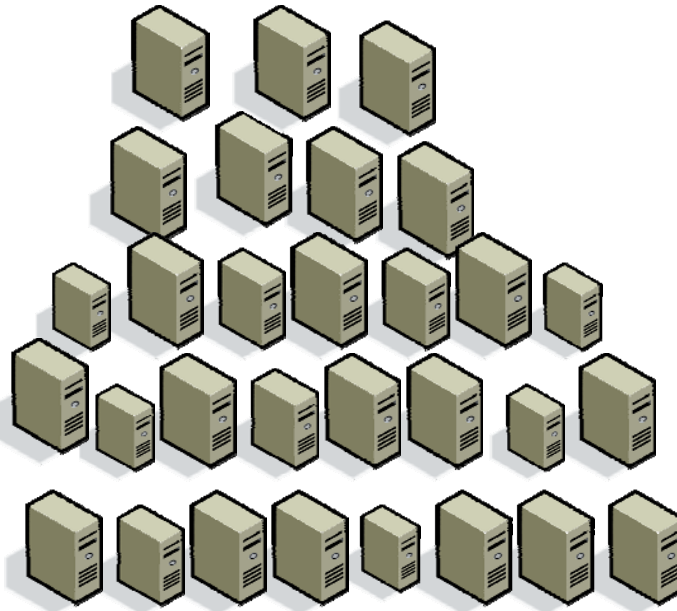


# Virtualisation briefly explained

1. create electronic versions of computers
2. store the electronic files on disk storage
3. process many virtual computers on 1 physical computer



# Our Vision in 2007



Name	Status	Usage	Host CPU - %	Host Mem - %	Guest Mem - %
Aftermath	Powered On	100%	3417	1900	0
BlackBerry	Powered On	100%	129	869	7
Q	Powered On	100%	149	633	6
ApplePower	Powered On	100%	69	526	4
EWProds1	Powered On	100%	1931	3676	20
Bathen	Powered On	100%	295	753	5
Stranet	Powered On	100%	23	826	10
Marhal	Powered On	100%	261	695	14
Asset	Powered On	100%	183	2036	15
Spelbre	Powered On	100%	193	1961	5
Spelbre	Powered On	100%	139	517	4
Sender	Powered On	100%	184	1140	4
MailServer_Prod	Powered On	100%	44	526	8
Cumulus1	Powered On	100%	64	1814	0
Medical	Powered On	100%	79	444	5
Stro	Powered On	100%	1874	3236	5
Son	Powered On	100%	55	754	7
WTCDC02	Powered On	100%	34	905	9



... cheaper, easier to manage, robust, better business continuity and disaster recovery

# Risk Mitigation

2007..

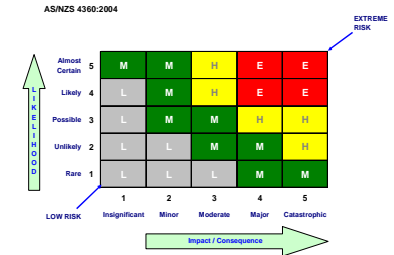
- ? **Bleeding or leading edge**
- ? How much
- ? Exec approval
- ? Expertise - consulting
- ? Expertise – internal
- ? Performance
- ? **Single point of failure**
- ? **Security**
- ? Time to deliver
- ? Resources

2009

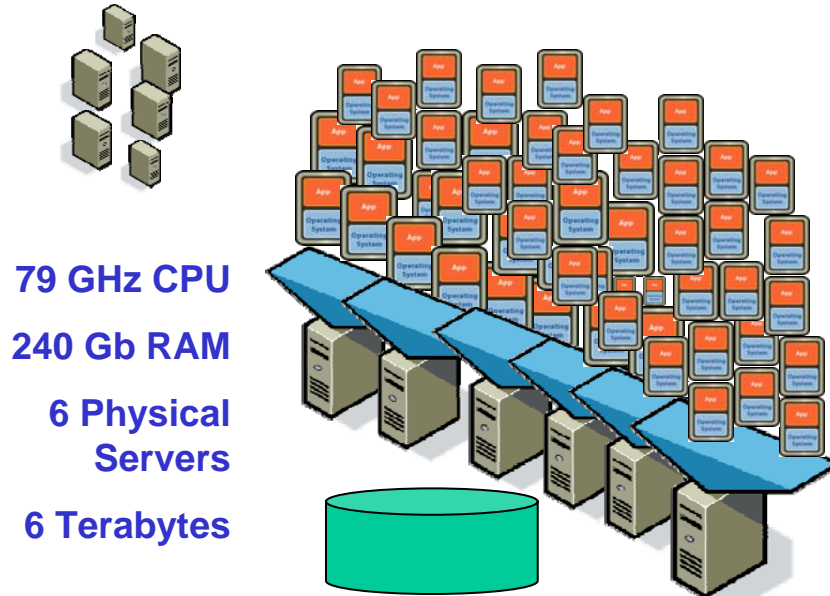
- ? server proliferation
- ? licencing
- ? virtual desktop challenges
- ? greater choice

2007..

- ✓ R&D ie. trying
- ✓ **Pick your partner(s)**
- ✓ Assessment
- ✓ Compelling business case
- ✓ Financing
- ✓ Target less than 12 months
- ✓ Planning
- ✓ Staged delivery
  - easy ones first
  - user feedback
- ✓ **Architecture**
  - Server
  - Fibre connection
  - SAN
- ✓ Help your staff grow
- ✓ Training

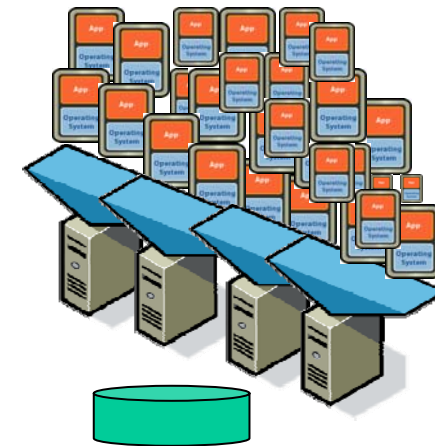


# Our Virtual World in 2009



79 GHz CPU  
240 Gb RAM  
6 Physical Servers  
6 Terabytes

24 Production  
20+ Dev, Training, Playpen  
35 Virtual Desktop  
20 in DR



Name	State	Status	Host CPU - %	Host Mem - %	Guest Mem - %
Aftermath	Powered On	OC	3417	1900	0
BlackBerry	Powered On	OC	129	869	7
C	Powered On	OC	149	823	4
Applway	Powered On	OC	69	525	4
Dialpad01	Powered On	OC	1931	3676	20
Estimote	Powered On	OC	295	793	5
Strawhat	Powered On	OC	231	826	10
Marshall	Powered On	OC	261	695	14
WFC025	Powered On	OC	163	2026	15
Asset	Powered On	OC	193	2993	5
Spillone	Powered On	OC	119	517	4
Sander	Powered On	OC	184	1140	4
Applway_Prod	Powered On	OC	41	525	8
CumAuto1	Powered On	OC	64	1814	0
Medical	Powered On	OC	75	444	5
Eric	Powered On	OC	187	2236	8
Win	Powered On	OC	55	754	7
WFC0202	Powered On	OC	34	905	9

Name	State	Status	Host CPU - %	Host Mem - %	Guest Mem - %
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nb. in DR some are just images that become VMs



## How much did we spend ?



	Assessment	\$5,700
	Configuration, Consulting	\$7,000
	Conversion & Replication	\$14,000
Phase1 Hardware:	2 Servers, RAM, .. 1 SAN	\$71,000
LGCS VMware deal #1:	Unlimited ESX VMware training	\$44,000
Phase 2 Hardware:	2 Servers, RAM NAS + other gear	\$58,000
LGCS VMware deal #2:	Virtual Desktop + ...	\$20,000
	<b>total spend</b>	<b><u>\$219,700</u></b>

Leasing Budget: 06/07 \$455k .. 07/08 \$460k .. 08/09 \$382k .. 09/10 \$335k

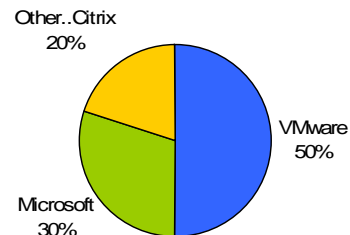
ie. funded by existing lease \$\$ and a one-off amount in 2007/2008



## The game is changing

- Low hanging fruit ... Virtual Servers, Virtual desktops
- Elastic IT ... external IT infrastructure / PAAS
- SAAS will consume more business systems
- Today's Suppliers are not tomorrow's
- Easier for Councils to share / collaborate / cluster

Virtualisation Market Share



Disclaimer: bandwidth required

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