



## SAN Optimisation Best Practices: Seeing Through The Clouds Of Virtualization

Mike Royle  
Enterprise IT Services Director Europe



# Unilever – Business Background



“We meet everyday needs for nutrition, hygiene and personal care with brands that help people feel good, look good and get more out of life.”



We continue to seek to enhance our profitability and productivity through our transformation agenda, the key features of which are;

- ❖ the simplification of our structure under the ‘**One Unilever**’ programme
- ❖ the strengthening of our brand portfolio through acquisitions and disposals
- ❖ the rationalisation of our supply chain

2008	€million
Turnover	40 523
Net profit	5 285
Cash flow from operating activities	5 326

# Unilever – IT Background

The IT function is a key enabler for the **One Unilever** transformation towards a globally aligned business through:

- strategic alliances and partnerships with global suppliers;
- improving IT infrastructure and service levels, whilst reducing costs;
- building consistent IT capabilities, processes and databases; and strategic outsourcing in selected key areas

We constantly measure our performance against industry best practice;

**Gartner**

**EQUATERRA**

To support global scale we adopt proven technologies that can scale;

**SAP**

**hp**

**vmware**

**BROCADE**

**IBM**

invent

**CISCO**

**Microsoft**

All technologies provide health monitoring for their solutions....and perform a valuable role in the estate.....Yet, the sum of the local optima does not equal the global optima

**VIRTUAL  
INSTRUMENTS**

# Unilever – SAN Strategy



Drivers

Server  
Virtualisation

Storage  
5 Pbytes with 50% annual  
growth

Flat IT Headcount

Strategy

Instrument SAN to understand and proactively manage exactly what is happening in the SAN and in the virtualised data center

Plan

Improve Risk  
Management &  
infrastructure  
coordination

Drive  
immediate  
OPEX savings

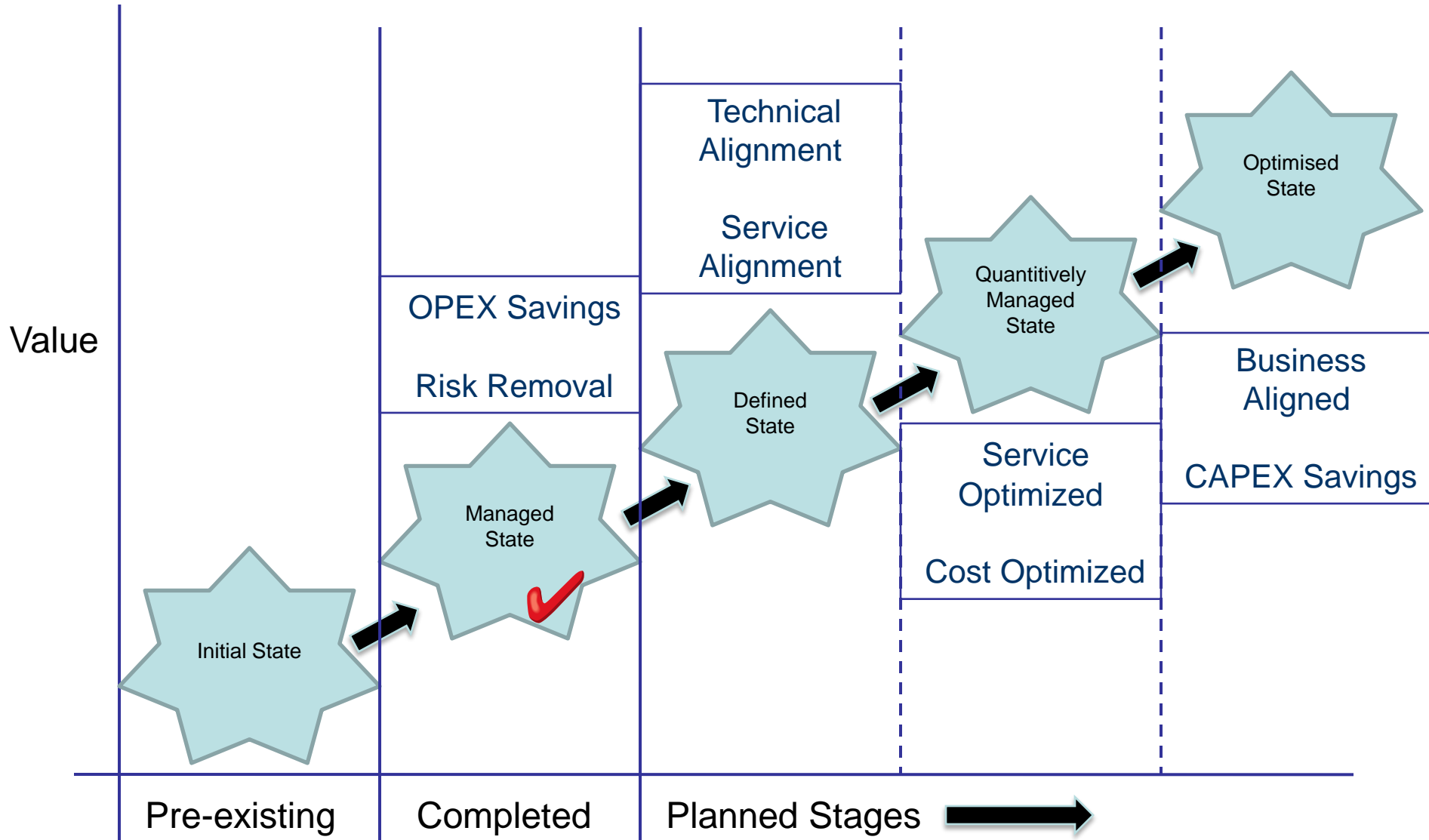
Refine IT  
organisational  
alignment to  
create CAPEX  
savings and  
agility

Optimise Cost,  
Service, and  
dialogue with  
the business

Value  
Realisation

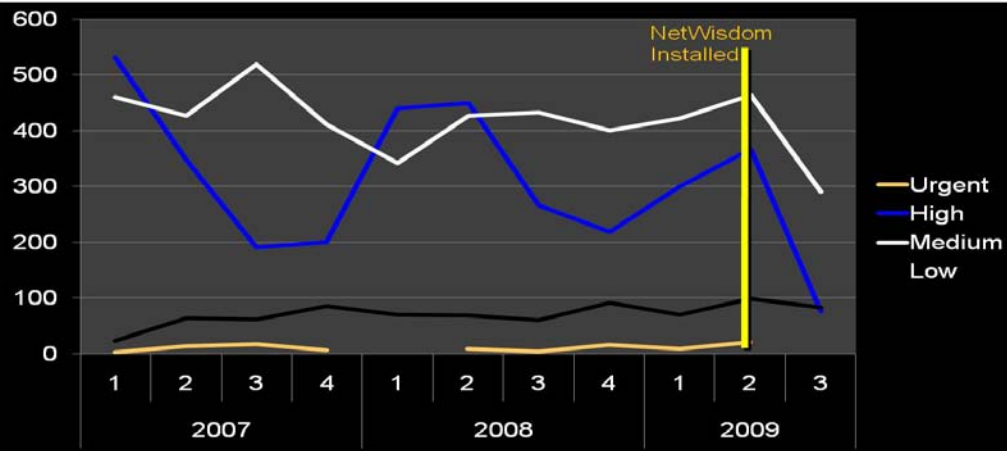
Storage Maturity Model

# Unilever – Storage Maturity Model



# Unilever – Managed State Benefits

Outcome – Key Productivity Gains; lowered OPEX cost, improved SAN risk management, and released resources to target CAPEX gains in next stages



OPEX & Productivity Benefit – Trouble Tickets;  
This area alone provides ROI for complete solution inside 12 months

No additional Business Impact measurement included

Switch MB/s	
brfs1503a	6,476.7
brfs1504a	5,361.8
cgfs1502a	5,265.1
cgfs1501a	5,098.9



OPEX & Productivity Example – Backups Saturated switch was a known problem, but the analysis is now instant, whereas previously it took 2 weeks

Attached Port WWN	Device	Attached Port Name	MB/Sec	Status	Issues
5001438002369240	brfsapp20827	brfsapp20827_g1a0	0	Balanced	
500143800236a8b6	brfsapp20827	brfsapp20827_g1a1	0	Balanced	
210900a08b1864d3	brfsapp20862	brfsapp20862_g1a0	0	Balanced	
210900a08b181153	brfsapp20862	brfsapp20862_g1a1	0	Balanced	
500143800236a22a	brfsapp20877	brfsapp20877_g1a0	0.004459254	Active	
500143800236a962	brfsapp20877	brfsapp20877_g1a1	0	Passive	
500143800236a3c4	brfsapp20878	brfsapp20878_g1a0	0	Balanced	
500143800236a654	brfsapp20878	brfsapp20878_g1a1	0	Balanced	
500143800236c776e	brfsapp20889	brfsapp20889_g1a1	6.54E-06	Single	Not Redundant
5001438002367659	brfsapp20881	brfsapp20881_g1a0	0	Balanced	
500143800236796c	brfsapp20881	brfsapp20881_g1a1	0	Balanced	
500143800236c631a	brfsapp20912	brfsapp20912_g1a0	0	Balanced	
500143800236c456	brfsapp20912	brfsapp20912_g1a1	0	Balanced	
500143800236c85e	brfsapp20926	brfsapp20926_g1a0	0.01152054	Single	Not Redundant
500143800236c64a	brfsapp20927	brfsapp20927_g1a0	0.001474179	Balanced	
500143800236c4da	brfsapp20927	brfsapp20927_g1a1	0.001607113	Balanced	
100000000848561	brfsapp64	brfsapp20064a1	8.353636971	Balanced	
100000000848548a	brfsapp64	brfsapp20064a2	9.556608299	Balanced	
10000000084862fa	brfsapp72	brfsapp20072a1	0	Balanced	
10000000084863c	brfsapp72	brfsapp20072a2	0	Balanced	
5001438002360992c	brfsfs20094	brfsfs20094_g1a0	4.86E-05	Imbalanced	
50014380023609930	brfsfs20094	brfsfs20094_g1a1	5.19E-05	Imbalanced	

Categorization Summary	Count	Percentage of Environment
Balanced	1228	69%
Passive	85	5%
Active	85	5%
Imbalanced	228	13%
Single (not redundant)	143	8%

OPEX & Productivity Example– Multi-Pathing; SAN best practice that was time-consuming to manage. Now the team has an instant view across the whole estate

# Unilever – Next Steps

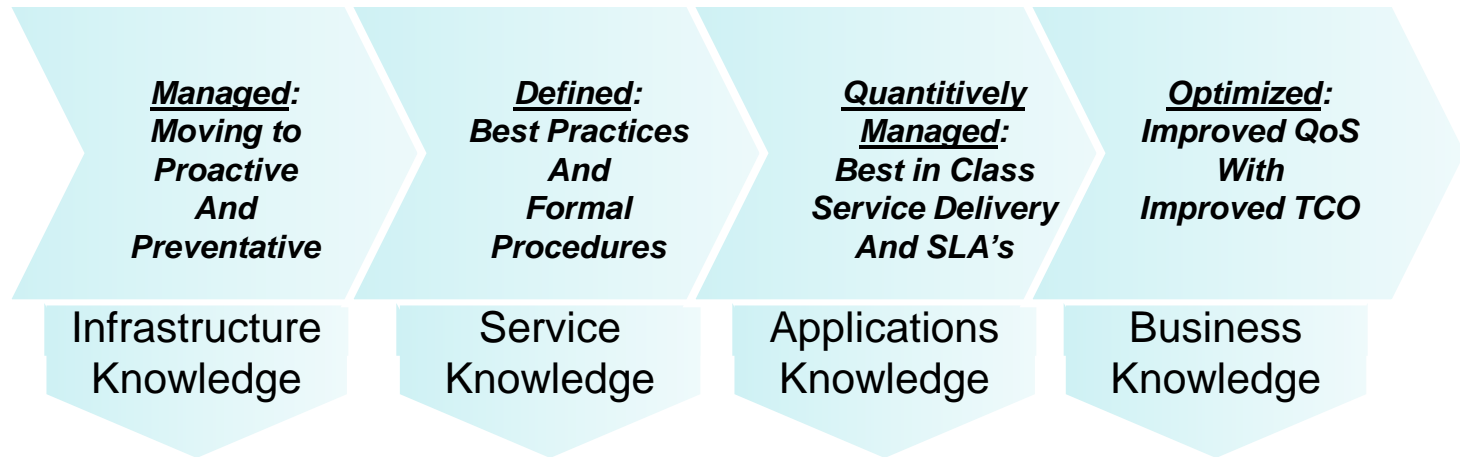


## Within the SAN Team;

- **Deepen our proactive monitoring capability**
  - Tighter thresholds and increase dynamic alerting
- Instrument our Test environment
  - Create a more dynamic environment for testing and deploying solutions
  - Prove out Vendor performance claims in our environment
- Continue to measure OPEX savings and scorecard improvements per the Storage Maturity Model

## Within the broader Infrastructure Team;

- Delivered in stages per the Storage Maturity Model



# Unilever – Why Virtual Instruments

## ❖ Aligned with our corporate IT strategy

The IT function is a key enabler for the **One Unilever** transformation towards a globally aligned business through:

- strategic alliances and partnerships with global suppliers;
- improving IT infrastructure and service levels, whilst reducing costs;
- building consistent IT capabilities, processes and databases; and strategic outsourcing in selected key areas

## ❖ Solution was recommended by Hardware Vendor

- ❖ Solve a problem in a key SAN – “needle in a haystack”
- ❖ Showed it’s clear potential in a fast install and analysis

## ❖ Server virtualisation was adding complexity to our SAN

- ❖ Benefits of virtualisation is clear in greater CPU & memory utilisation
- ❖ However VM makes dynamic decisions that affect I/O and those impacts are felt most in the SAN

## ❖ Complementary to our existing ‘point’ monitoring solutions



## SAN Optimisation Best Practices: Seeing Through The Clouds Of Virtualization

# *Thank You*

Mike Royle  
Enterprise Services Director Europe

