Priložnosti virtualizacije informacijske infrastrukture

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where information lives®

Otočec, 26.3.2009
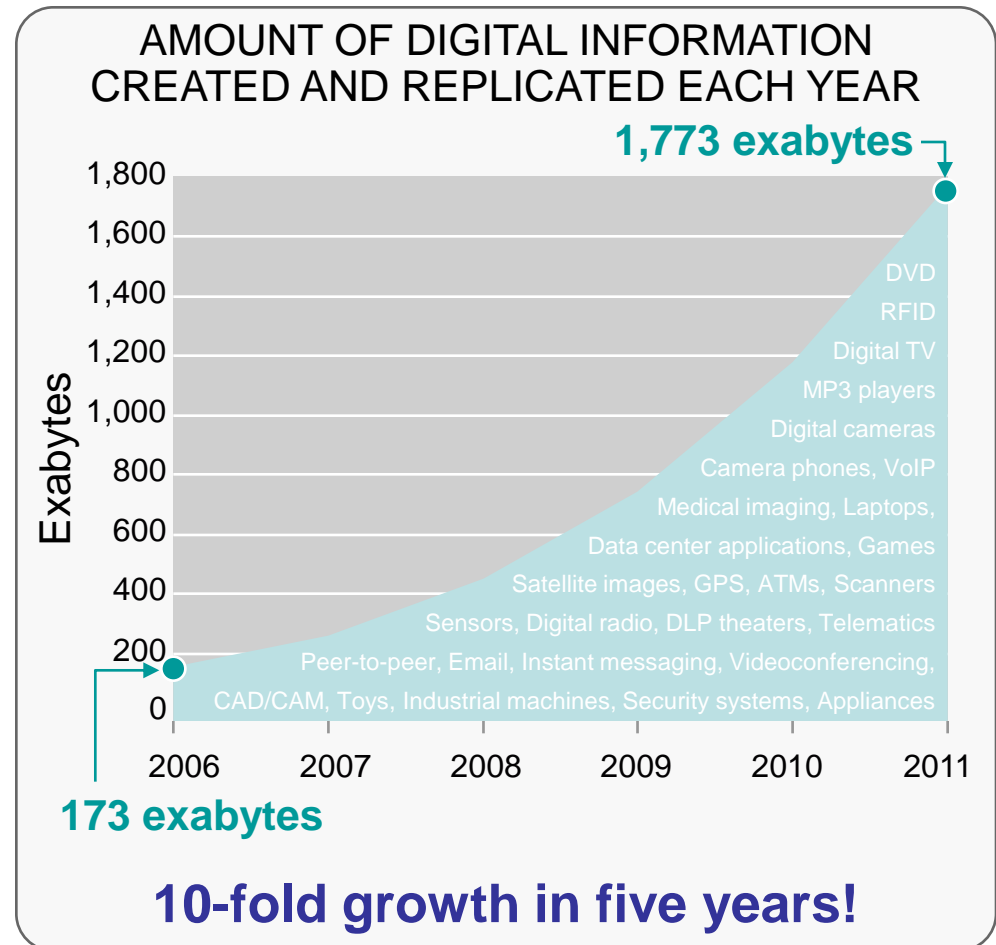
Agenda:
• **Rast informacij – vsebin**
• **Izzivi informatike**
• **Virtualizacija**
• **Povzetek**

Digital Information Created and Replicated Worldwide

- 281 exabytes (billion gigabytes of digital information created and replicated in 2007, 10% more than previously estimated
- Close to two zetabytes of digital information in 2011
- Over 95% of the digital universe is "unstructured data"
  - In organizations that number is 80%

AMOUNT OF DIGITAL INFORMATION CREATED AND REPLICATED EACH YEAR

1,773 exabytes

Exabytes

1,800
1,600
1,400 — DVD
1,200 — RFID — Digital TV
1,000 — MP3 players
800 — Digital cameras — Camera phones, VoIP
600 — Medical imaging, Laptops, — Data center applications, Games
400 — Satellite images, GPS, ATMs, Scanners — Sensors, Digital radio, DLP theaters, Telematics
200 — Peer-to-peer, Email, Instant messaging, Videoconferencing,
0 — CAD/CAM, Toys, Industrial machines, Security systems, Appliances

2006   2007   2008   2009   2010   2011

173 exabytes

10-fold growth in five years!

Source: IDC White Paper, "The Diverse and Exploding Digital Universe," Sponsored by EMC, March 2008

Information Challenges

THE INFORMATION WORLD

Managing **growth**
Dramatic growth of information
Increased infrastructure complexity

Managing **risk**
Protecting against information loss
Securing against unauthorized access
Complying with legal and corporate mandates

Managing **effectiveness**
Reducing capital and operational costs
Improving flexibility and responsiveness
Delivering service levels demanded by the business

Creating **new value**
Leveraging information in new ways
Using infrastructure to drive the business

IDC report – by 2011:
- 1.773 zetabytes, ~60% CAGR
- 70% created by individuals
- 85% managed by organizations

Source: IDC White Paper, "The Diverse and Exploding Digital Universe," Sponsored by EMC, March 2008

GOSPODARSKA ZBORNICA
DOLENJSKE IN BELE KRAJINE
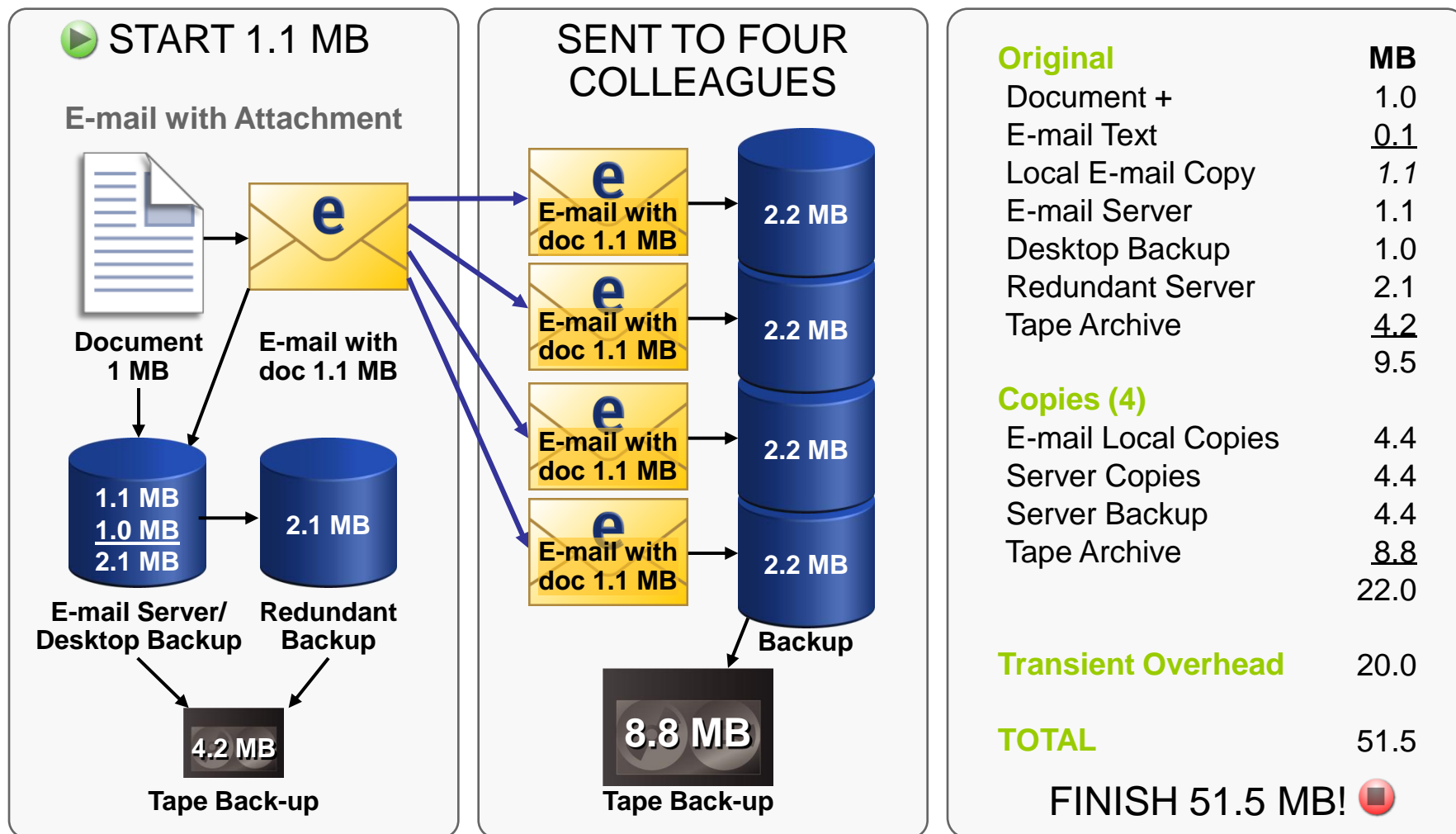
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Virtualization…

- Provides logical views of physical elements while preserving the usage interfaces for those resources
- Removes physical resource limits and improves resource utilization across heterogeneous devices

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DOLENJSKE IN BELE KRAJINE

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The Digital Footprint of an E-mail

START 1.1 MB

E-mail with Attachment

Document 1 MB

E-mail with doc 1.1 MB

1.1 MB
1.0 MB
2.1 MB

2.1 MB

E-mail Server/ Desktop Backup

Redundant Backup

4.2 MB

Tape Back-up

SENT TO FOUR COLLEAGUES

E-mail with doc 1.1 MB → 2.2 MB

E-mail with doc 1.1 MB → 2.2 MB

E-mail with doc 1.1 MB → 2.2 MB

E-mail with doc 1.1 MB → 2.2 MB

Backup

8.8 MB

Tape Back-up

	MB
Original	
Document +	1.0
E-mail Text	0.1
Local E-mail Copy	*1.1*
E-mail Server	1.1
Desktop Backup	1.0
Redundant Server	2.1
Tape Archive	4.2
	9.5
Copies (4)	
E-mail Local Copies	4.4
Server Copies	4.4
Server Backup	4.4
Tape Archive	8.8
	22.0
Transient Overhead	20.0
TOTAL	51.5

FINISH 51.5 MB! 🔴

Source: IDC White Paper, "The Diverse and Exploding Digital Universe," Sponsored by EMC, March 2008
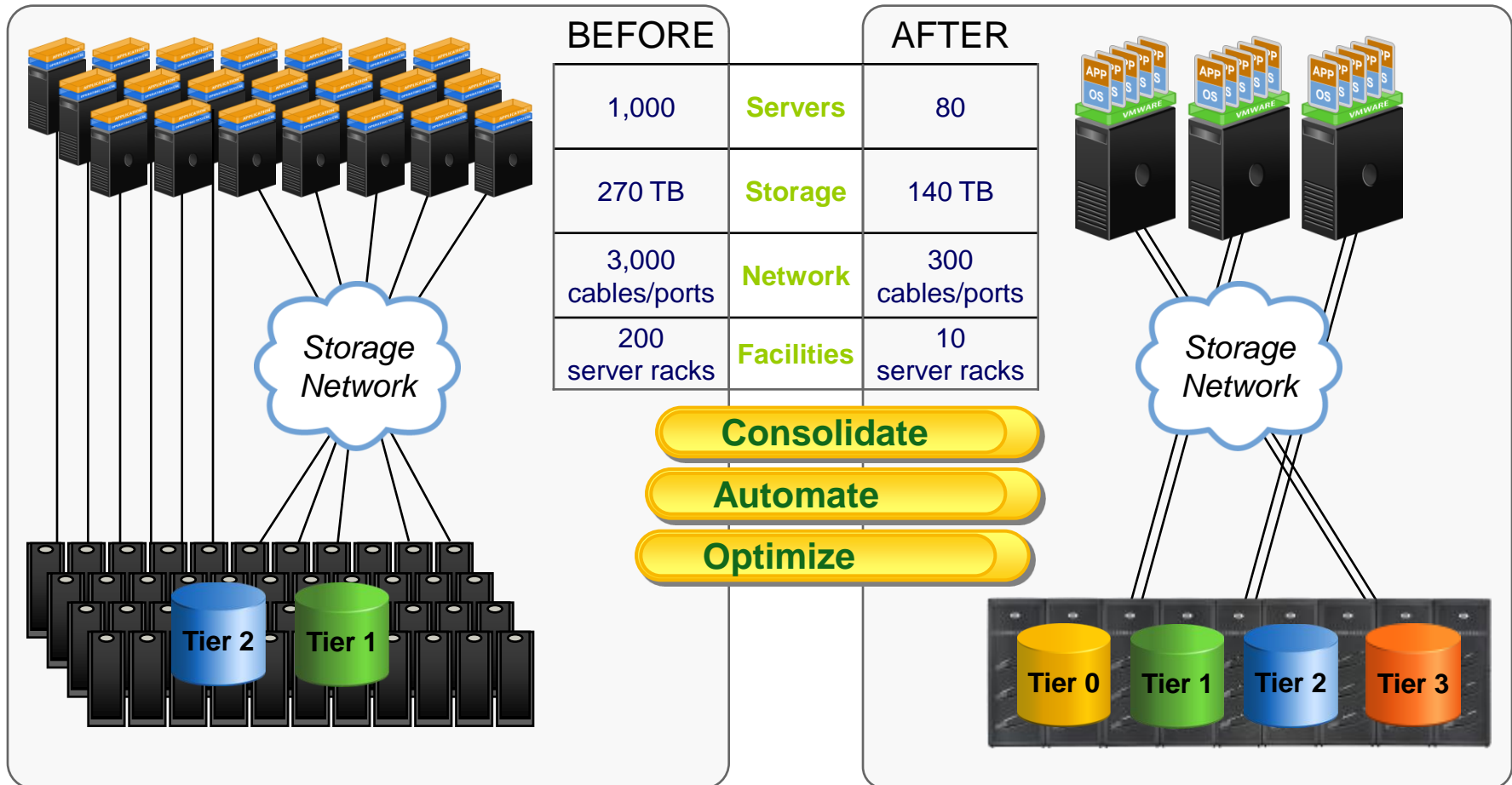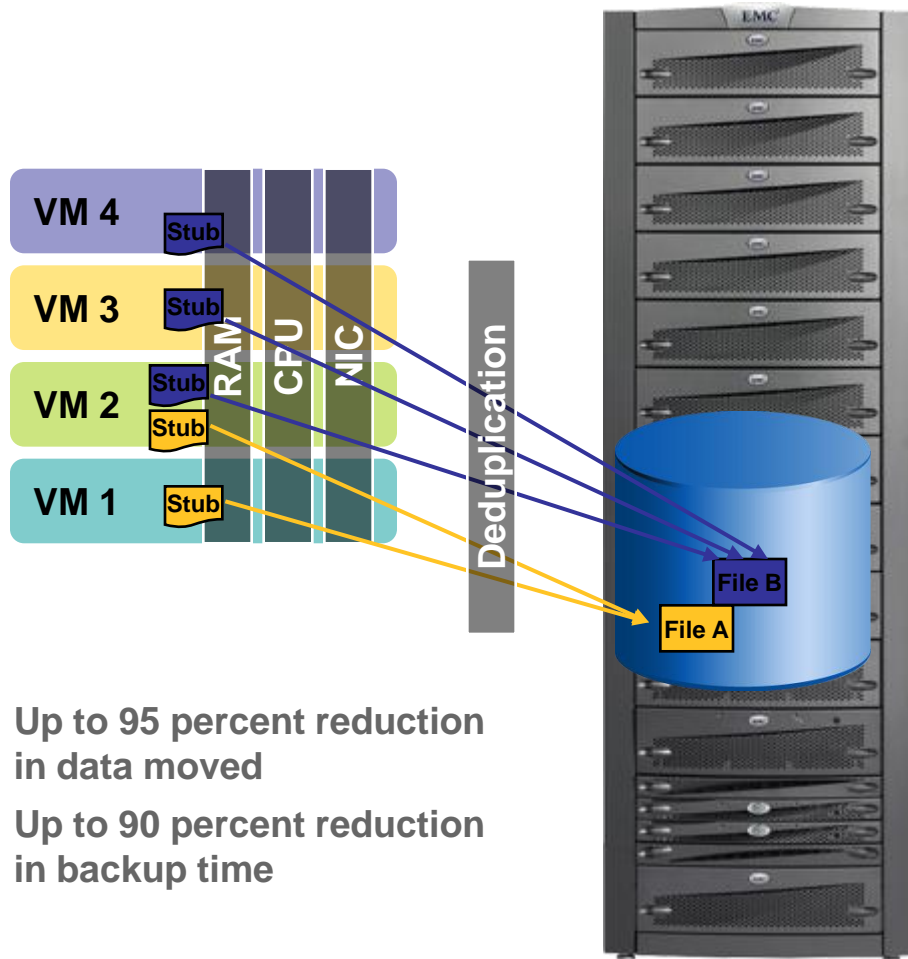
Server, Storage Network, and Storage Consolidation

Savings of +70% in reduced data center space, power, and cooling

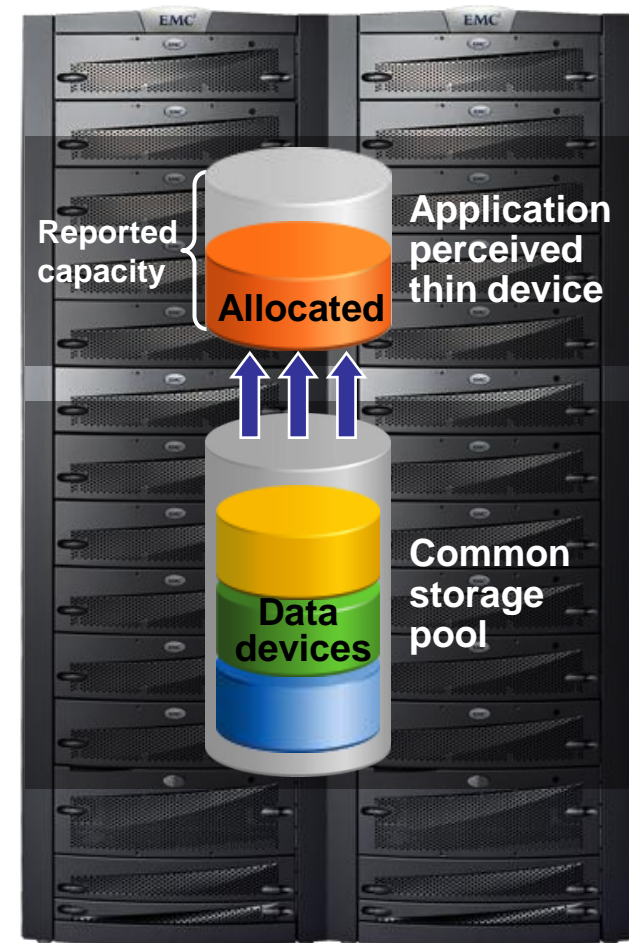Technics used: Virtualisation, data clasification, storage provisioning, virtual provisioning, data deduplication

BEFORE		AFTER
1,000	**Servers**	80
270 TB	**Storage**	140 TB
3,000 cables/ports	**Network**	300 cables/ports
200 server racks	**Facilities**	10 server racks

Consolidate

Automate

Optimize

Storage Network

Storage Network

Tier 2   Tier 1

Tier 0   Tier 1   Tier 2   Tier 3

Examples of new storage virtual technologies

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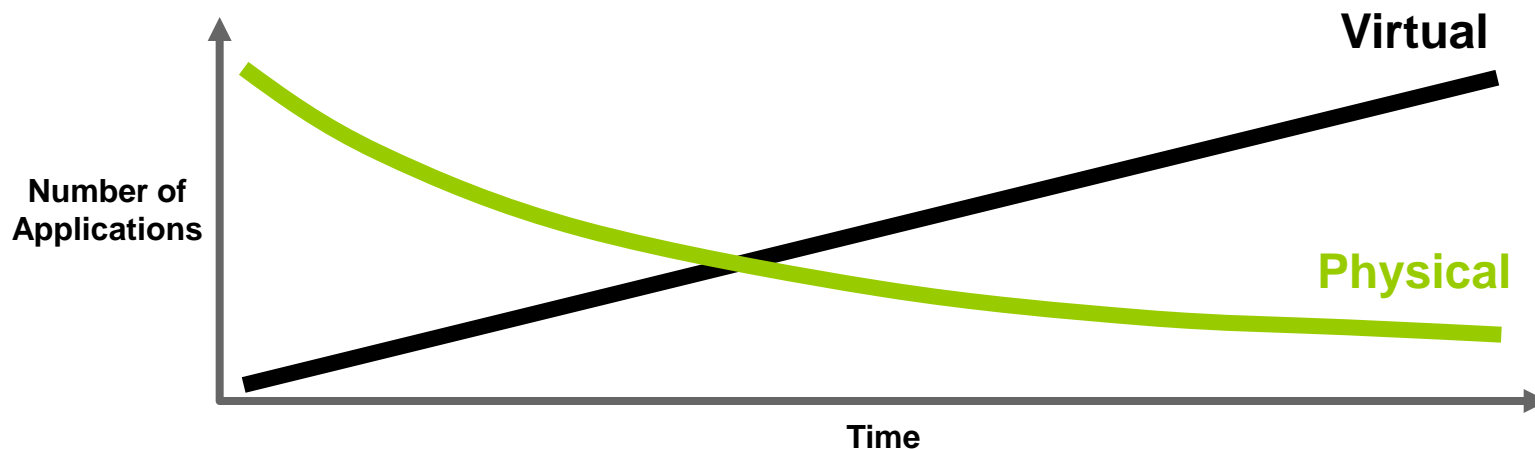DOLENJSKE IN BELE KRAJINE

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Summary:

- Virtualization changes IT
  - Cost models, provisioning processes, management, disaster recovery, etc.
  - Virtualization empowers business responsiveness unavailable in the "physical" world
- Information Infrastructure must enable the smooth assimilation of virtualization
  - Understand the interdependence between virtual and physical components
  - Operate equally well in both paradigms
  - Leverage the benefits of virtualization

Virtual

Number of Applications

Physical

Time

Impact of virtualization is revolutionary, the journey is evolutionary

VPRAŠANJA & HVALA