Cloud Computing

SEWP ZG527

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Motivation

Powerful multi-core processors

General purpose graphic processors

Explosion of domain applications

Superior software methodologies

Proliferation of devices

Wider bandwidth for communication

Virtualization leveraging the powerful hardware
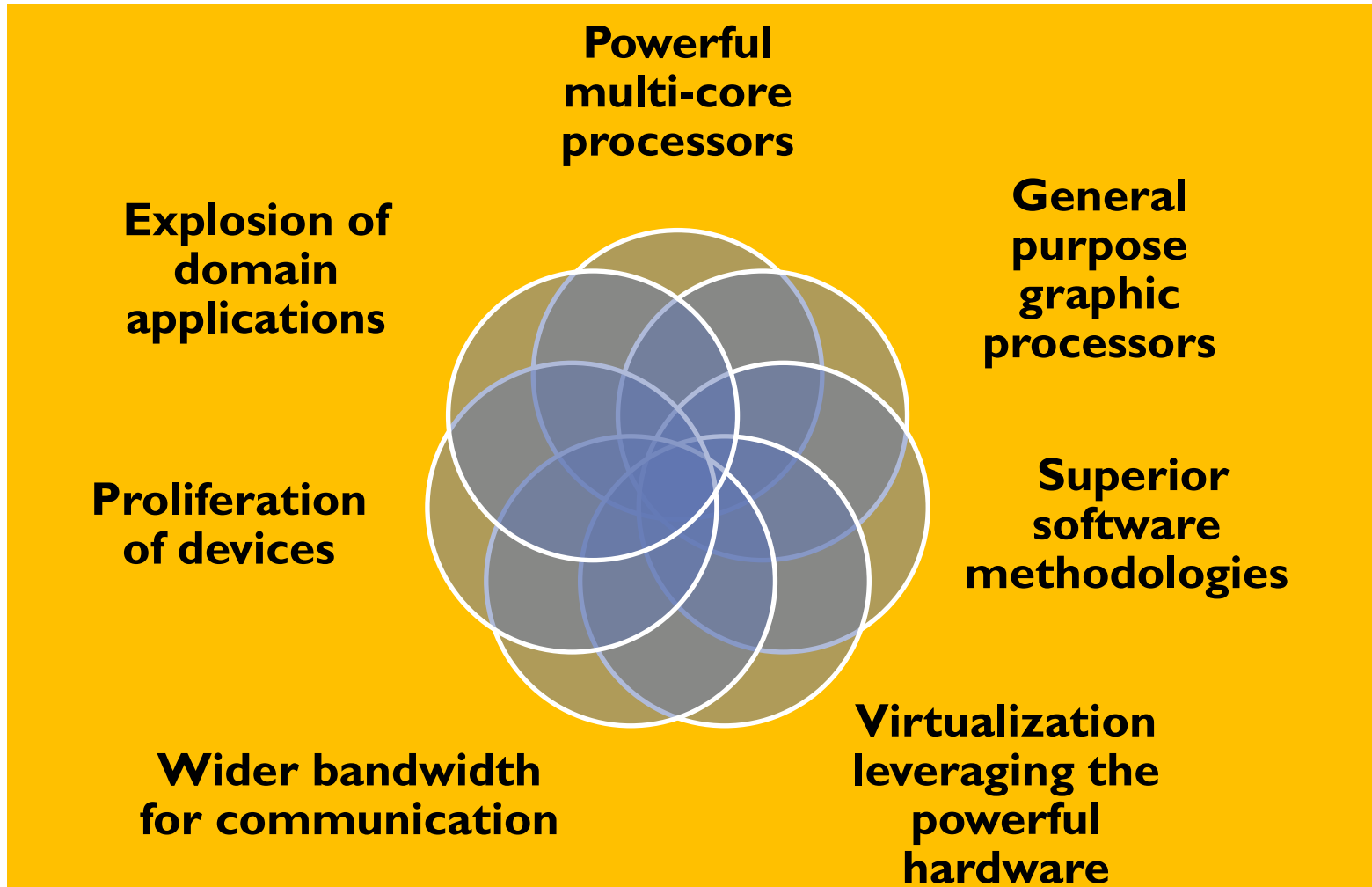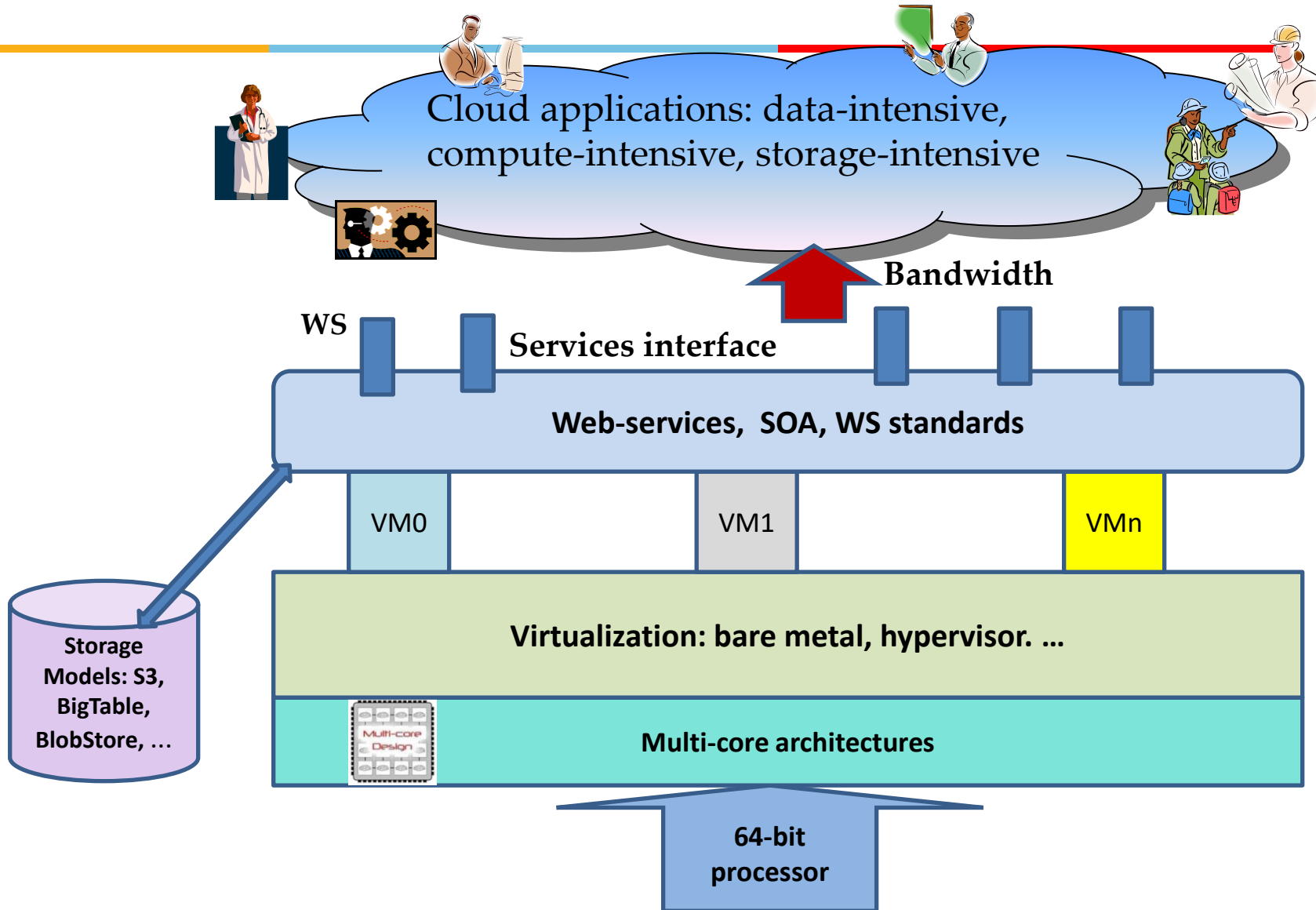
1. Web Scale Problems
2. Web 2.0 and Social Networking
3. Information Explosion
4. Mobile Web

Technology Advances

Cloud applications: data-intensive, compute-intensive, storage-intensive

Bandwidth

WS

Services interface

Web-services, SOA, WS standards

VM0   VM1   VMn

Virtualization: bare metal, hypervisor. …

Multi-core architectures

Storage Models: S3, BigTable, BlobStore, …

64-bit processor

What is Cloud Computing?

Cloud Computing is a general term used to describe a new class of network based computing that takes place over the Internet,

- basically a step on from Utility Computing
- a collection/group of integrated and networked hardware, software and Internet infrastructure (called a platform).
- Using the Internet for communication and transport provides hardware, software and networking services to clients

These platforms hide the complexity and details of the underlying infrastructure from users and applications by providing very simple graphical interface or API (Applications Programming Interface).

What is Cloud Computing cont.…

In addition, the platform provides on demand services, that are always on, anywhere, anytime and any place.
Pay for use and as needed, elastic
- scale up and down in capacity and functionalities
The hardware and software services are available to
- general public, enterprises, corporations and businesses markets

Drivers for the new Platform

Generational Shift of Computing Platform

http://blogs.technet.com/b/yungchou/archive/2011/03/03/chou-s-theories-of-cloud-computing-the-5-3-2-principle.aspx

Cloud Summary

- Shared pool of configurable computing resources
- On-demand network access
- Provisioned by the Service Provider