CLOUD COMPUTING

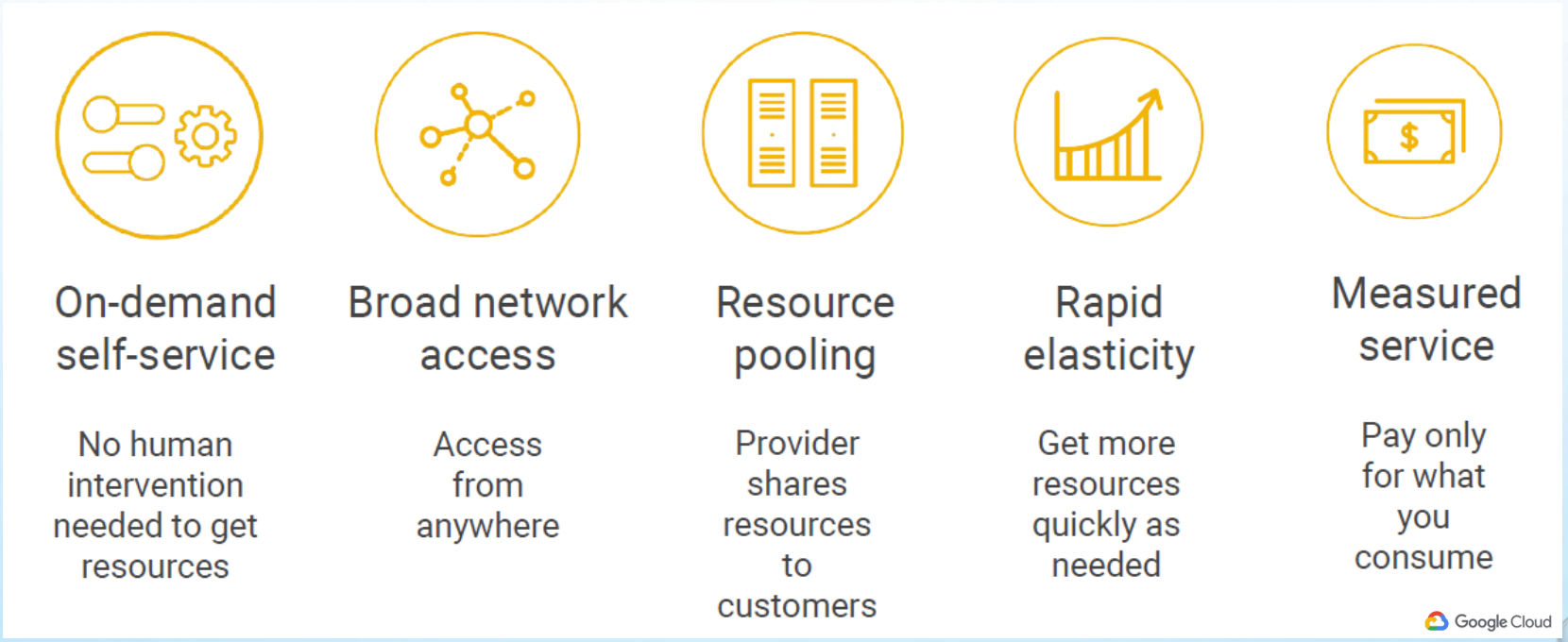
DSE-3157

DEPARTMENT OF DATA SCIENCE AND COMPUTER APPLICATIONS,

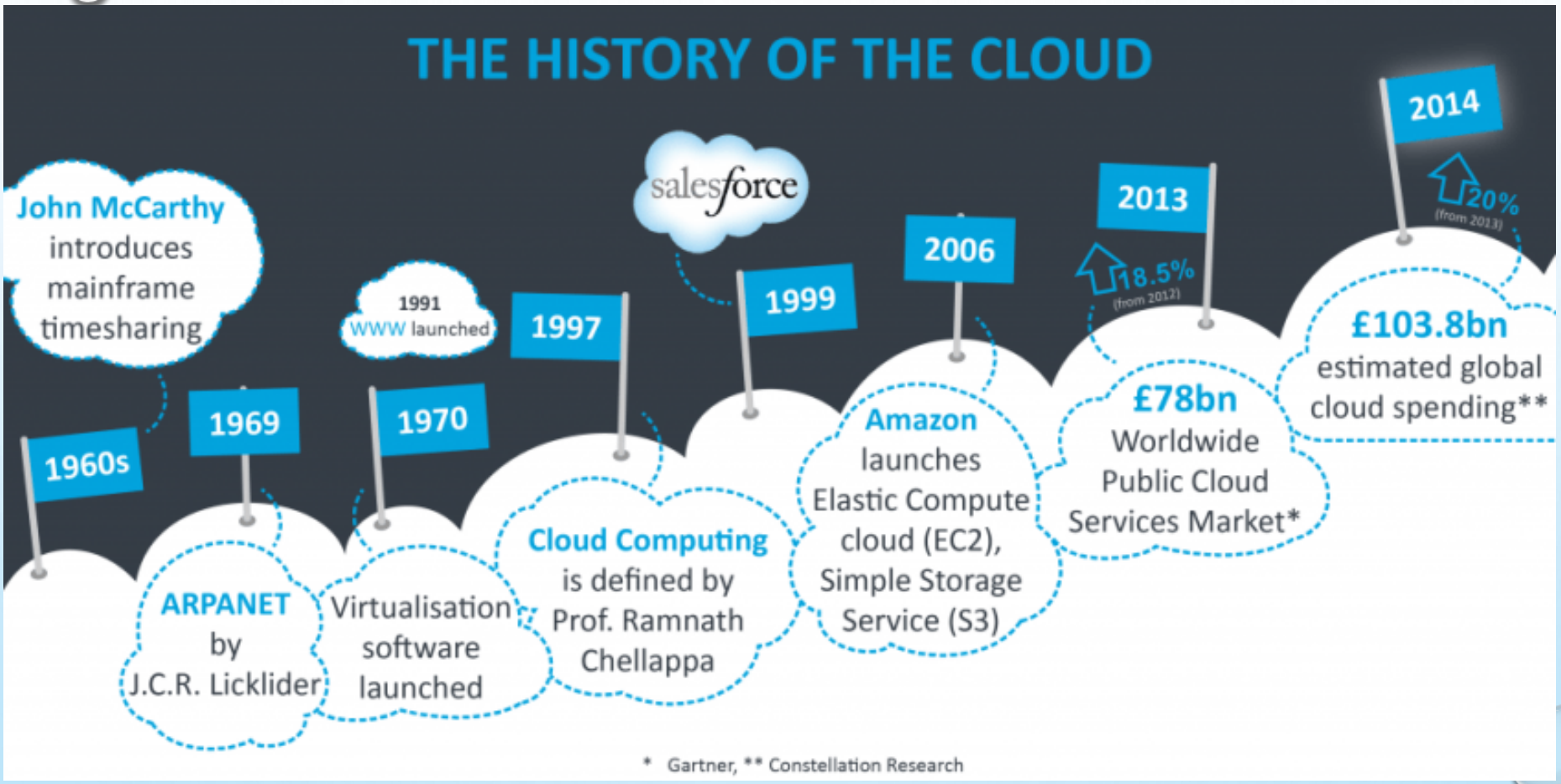
MANIPAL INSTITUTE OF TECHNOLOGY,

MANIPAL ACADEMY OF HIGHER EDUCATION

WHAT IS CLOUD COMPUTING?

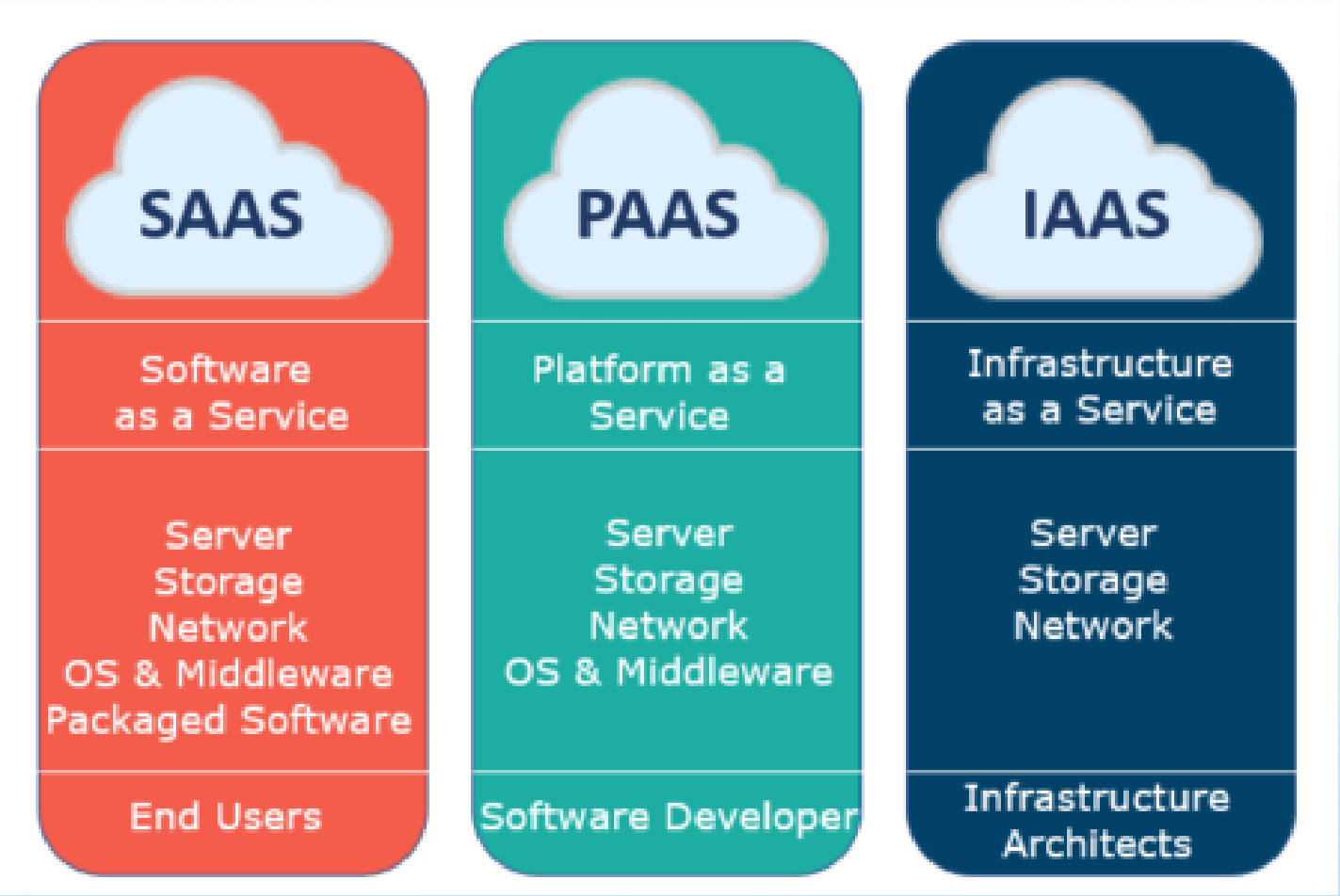


EVOLUTION OF CLOUD



BENEFITS OF CLOUD

TYPES OF SERVICES



KEY CLOUD SERVICE PROVIDERS

COURSE STRUCTURE

Course Objectives

- Differentiate Between Conventional Computing Systems And Cloud Computing Systems.
- Explain The Role And Essentials Of Virtualization In The Cloud-enabling Technologies
- Interpret The Issues Related To Service-oriented Architecture.
- Analyze Various Cloud Programming Models And Their Security To Apply Them To Solve Problems On Real-time Cloud Applications.

COURSE STRUCTURE

INTRODUCTION TO CLOUD COMPUTING

- Cloud Computing In A Nutshell
- Roots Of Cloud Computing
- Layers And Types Of Clouds
- Desired Features Of A Cloud
- Cloud Infrastructure Management
- Infrastructure As A Service Providers , Platform As A Service Providers ,Challenges And Risks, Public Clouds, Private Clouds, Hybrid Clouds.

COURSE STRUCTURE

VIRTUALIZATION & INFRASTRUCTURE AS A SERVICE

- Understanding Virtualization: Describing Virtualization, Importance Of Virtualization, Understanding Virtualization Software Operation.
- Introduction To Hyper Converged Infrastructure: Definition, Resources To Consolidate.
- Architecting The Hyper Converged Data Center: Server Support, Software Defined Storage
- The Role Of Custom Hardware In A Commodity Infrastructure Hyper Convergence And The Public Cloud: Public Cloud, Private Cloud The Intersection Of Cloud And Hyper Converged Infrastructure,
- Hyper Convergence And The Private Cloud Virtual Machines Provisioning And Migration Services:

COURSE STRUCTURE

SERVICE ORIENTED ARCHITECTURES

- Services And Service Oriented Architectures,
- Message-oriented Middleware,
- Portals And Science Gateways, Discovery, Registries, Metadata, And Databases, Workflow In Service-oriented Architectures

COURSE STRUCTURE

CLOUD PROGRAMMING AND SOFTWARE ENVIRONMENTS

- Features Of Cloud And Grid Platforms,
- Parallel And Distributed Programming Paradigms, Programming Support Of Google App Engine, Programming On Amazon AWS And Microsoft Azure
- SLA MANAGEMENT: Inspiration, Traditional Approaches To SLA Management, Types Of SLA, Life Cycle Of SLA, SLA Management In Cloud, Automated Policy-based Management.

COURSE STRUCTURE

CLOUD SECURITY

- Cloud Computing Security Architecture.
- Data Security
- Network Security
- Host Security, Compromise Response

REFERENCE BOOKS

1. Rajkumar Buyya, James Broberg, Andrzej Goscinski, Cloud Computing Principles and Paradigms, Wiley Publications, 2013.
2. Kai Hwang, Geoffrey Fox, JackDongarra, Todd Green, Distributed and Cloud Computing: From Parallel Processing and the Internet of Things, Morgan Kaufmann Publishers,2012
3. George Reese, Cloud application architectures: building applications and infrastructure in the cloud, O'Reilly Media, Inc., 2009.
4. Matthew Portnoym, Virtualization Essentials, John Wiley and Sons Publication, 2012
5. Scott D Lowe, Hyper-converged Infrastructure implementation strategies, Actual Tech media, 2015
6. Thomas Erl, Service-Oriented Architecture Principles of Service Design, Prentice-Hall, 2008

NEXT CLASS….

INTRODUCTION TO CLOUD COMPUTING..