***Q1: The service economy, services systems, IT, and productivity***

* The role of services in economic growth and why we study them

–The service sector plays a dominant and growing role in economic growth and employment in most parts of the world.

–But the service sector is less efficient than the manufacturing sector

–Therefore, the improved productivity and competitive performance of firms and nations relies on improving the productivity of the service sector and services innovation.

–IT is a key enabler of increased productivity through innovation and optimization.

* Service productivity

Service productivity is a function of efficiency, effectiveness, and demand. The focus is on the concepts of customer satisfaction and quality.

* The role of IT in optimization, innovation, and transformation in services

IT is a key enabler of increased productivity through innovation and optimization.

***Q2: Specialization and service‐oriented models of business***

* Traditional organizations and specialized organizations

Typically, generalist organizations consisted of three kinds of business, because that achieved the lowest transaction costs. (customer relationship management, product innovation, infrastructure management)

However the ongoing and capital costs of doing this can be high as the organization needs to specialize in all three kinds of business i.e. it is difficult to optimize scope, speed and scale simultaneously.

* Enablers of specialization

Advances in networks, standards, commoditization of processes and other barriers to interaction, are lowering the transaction costs of unbundling and partnering in the market

This will lead to agile, dynamic, specialized providers (and aggregators), i.e. services

* The role of IT in specialization and the “as-a-service” model

Consolidated all back-office functions (finance, accounting, HR, facilities management, IT into Global Business Services (GBS)– a service provider to other parts of the company

Then outsourced any activities in these which were non- strategic and could be done better by someone else

Innovated by switching to a service-oriented business model

* The nature and role of digital platforms

Online structures that enable a wide range of human activities

Changes the way we work, socialise, create value and compete for profits

***Q3: Service‐oriented enterprise and IT architecture***

* Purpose of enterprise architecture (EA)

The purpose of enterprise architecture is to optimize across the enterprise the often fragmented legacy of processes (both manual and automated) into an integrated environment that is responsive to change and supportive of the delivery of the business strategy.

* Domains of EA

• The **Business Architecture** defines the business strategy, governance, organization, and key business processes.

• The **Data Architecture** describes the structure of an organization’s logical and physical data assets and data management resources.

• The **Application Architecture** provides a blueprint for the individual applications to be deployed, their interactions, and their relationships to the core business processes of the organization.

• The **Technology Architecture** describes the logical software and hardware capabilities that are required to support the deployment of business, data, and application services. This includes IT infrastructure, middleware, networks, communications, processing, standards, etc.

* Definition of a service in SOA

Service Oriented Architecture (SOA) is a style of IT architecture that delivers agility and Boundary less Information Flow™. It is deployed on an increasing scale in enterprises today.

* Characteristics and benefits of Service‐oriented architecture (SOA)

• It is based on the design of services – which mirror real-world **business activities** – comprising the enterprise (or inter-enterprise) business processes.

• Service representation utilizes business descriptions to provide **context** (i.e., business process, goal, rule, policy, service interface, and service component) and implements services using service orchestration.

• It places unique requirements on the infrastructure – it is recommended that implementations **use open standards to realize** interoperability and location transparency.

• Implementations are environment-specific – they are constrained or enabled by context and must be described within that context.

* Nature and benefit of interoperability

Interoperability is a characteristic of a product or system, whose interfaces are completely understood, to work with other products or systems, present or future, in either implementation or access, without any restrictions.

Benefits:

users have a much greater choice of products

manufacturers can benefit from the economies of scale that a wider market brings

Interoperability is therefore a crucial factor in the success of modern technologies, and it is market demand that has ensured that interoperability holds a prominent position in standardization.

* Relationship between business processes and services in SOA

• Business processes may use services to achieve their objectives.

• Services implemented with explicit business processes can be more quickly adapted to business changes.

* Differences between SOA and MSA

• SOA a service may be composed of other services; In MSA we define a service as independent and self- contained, which implies that it cannot be composed of other services.

• Herein lies one of the main differences between the SOA and MSA architectural styles.

• In most part the frame of a micro service will in fact align with that of a service of the SOA architectural style, with the exception of how much of the business process it encapsulates, as many business processes contain many services in order to complete the task.

• MSA is really a subset or special architectural form of SOA. MSA provides an approach to delivering SOA in an effective manner for the right set of business drivers