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

**1.1 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;

– The service sector is less efficient than the manufacturing sector;

– 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 optimisation.

**1.2 Service productivity**

- The productivity of services is lower than the productivity of manufacturing;

- In part it is known about how to make products more efficient than how to make services more efficient (use IT-centric service system);

- Productivity is a measure of economic efficiency at various levels, increased productivity is the ability to produce more with the same or less input and leads to economic growth.

**1.3 The role of IT in optimisation, innovation, and transformation in services**

**(1) Optimisation:**

It means that change the ratio of input to output as far as possible;

Process improvement, e.g. IT governance;

People can be replaced by computational processes;

IBM industrialization of services: paring services jobs down to standardized, repeatable tasks; spreading the work around to world to where it can be done most efficiently and most inexpensively; and steadily automating simpler tasks with software.

**(2) Innovation:**

Analytics = data + algorithms

Smart services, e.g. IOT, wearable

New models of business: smart phone in Africa

**(3) What is the service economy?**

service provision rather than goods production, E.g. the household is a service provider which integrates resources (including products) for benefits of value to consumers but this is not counted in economic statistics unless it is outsourced (externalised)

**(4) Drivers of growth**

**- Algorithmic Revolution Service**

Activities are changed when they can be decomposed to formalisable, codifiable, computable processes with clearly defined rules.

**- Hyper digitization**

Product and service are digital, and proportion is growing e.g. Netflix.

**Q2: Specialisation and service-oriented models of business**

**2.1 Traditional organisations and specialised organisations**

In the past, practical limitations forced companies to build their business models around only one of these attributes, keeping significant achievement of the others an intense desire but impractical to implement. The barriers of time and distance limited the ability of companies to integrate internal and external capabilities.

Information and communications technologies have made the world a smaller place. Operations and financials are more visible, and the risks of collaboration have declined. Companies can now tap a much broader range of capabilities, regardless of where they reside. (Even distances of thousands of miles pose few problems.)

Moreover, it is now much easier to find the best providers of the capabilities that fit their business needs. Typically, generalist organizations consisted of three kinds of business, because that achieved the lowest transaction costs. 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. 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.

**2.2 Enablers of specialisation**

It improves productivity in services

For example：

– Business analytics

Big data and the enterprise as laboratory e.g. what if? Football, expedia;

– Smart services (the internet of things)

Pacific Control in Dubai, China’s smart grid;

– New models of business

Rolls-Royce, fishing in India, banking in Africa, Amazon, flying planes or flying passengers;

**2.3 The role of IT in specialisation and the “as-a-service” model.**

**(1) The role of IT in specialisation**

Advances in networks, standards, commoditisation of processes and other barriers to interaction, are lowering the transaction costs of unbundling and partnering in the market. This will produce agile, dynamic, specialised providers. e.g. Procter & Gamble, outsource activity as a service, innovated by switching to a service-oriented business model.

**(2) IT “as-a-service” model**

–Virtualization and data consolidation

–Cloud computing and the light switch

- Wrapping complexity in simplicity

e.g. •Amazon Elastic Compute Cloud (EC2).

–SaaS, utility computing (salesforce.com), IaaS, PaaS

–Service oriented enterprise and IT architecture

– The rise of the platform economy.

**2.4 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, e.g. amazon, a list of search engines, social networks, food manufacturers and producers of “physical, digital and interactive media of all types; e.g. Auto insurance companies, experimenting with networked sensors installed in cars that allow them to price insurance based on actual driving behaviors.