**1 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.

**Firstly,** services sector is over 50% of GDP in low income countries and as their economies continue to develop, the importance of services in the economy continues to grow.

**Secondly,** employment is also adjusting to the changes and people are willing to find work in the service economy rather than other sectors. This new job market provides employment for low skilled labour in service sectors, thus benefiting the poor in particular and representing an overall net increase in employment.

**Lastly,** the service economy is critical to economic growth. This means that recent economic growth in developing countries rely as much on services as on natural resources.

The improved productivity and competitive performance of firms and nations relies on improving the productivity of the service sector and services innovation. The export potential of many of these products is already well understood, e.g. in tourism, financial services and transport, however, new opportunities are arising in other sectors, such as the health sector. For example:

* Indian companies who provide scanning services for US hospitals
* South Africa is developing a market for surgery and tourism packages
* India, the Philippines, South Africa and Mauritius have experienced rapid growth in IT services, such as call centers, back-office functions and software development;

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

**1.2 Service productivity**

Service productivity is a function of (1) how effectively input resources into the service (production) process are transformed to outputs in the form of services (internal efficiency), (2) how well the quality of the service process and its outcome is perceived (external efficiency or effectiveness) and (3) how effectively the capacity of the service process is utilized (capacity efficiency). In addition, service productivity as a learning experience and directions for developing measurement models for service productivity are discussed.

~~- 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.**

**1.3.1 IT Optimisation in services**

IT Service Optimization (ITSO) is aimed at optimizing the planning and delivery of IT services. The goal is to consistently meet IT service levels while minimizing infrastructure costs and mitigating risks. This increased efficiency makes it easier to manage IT resources, adapt to business changes, and align with business objectives.

It means that how to 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.

**1.3.2 IT Innovation in services**

* **Business analytics**

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

* **Smart services (the internet of things)**

Pacific Control in Dubai, eg. China’s smart grid;

* **New models of business**

Rolls-Royce, eg. fishing in India and banking in Africa;

Amazon, eg. flying planes or flying passengers.

**Higher customer expectations.**

More than ever, consumers demand greater involvement, customization, personalization, and mobility from services—with immediate results. When they see cutting-edge service innovations in one industry, they expect to find them in others as well. As industry boundaries increasingly blur for customers, companies must look for new ideas beyond their immediate rivals.

**The rise of the mobile Internet.**

About 1.5 billion smartphones are currently in use worldwide and more than 100 billion apps were downloaded in 2013, up from 64 billion in 2012. The resulting mobile and self-service possibilities are transforming service delivery. Uber’s disruption of the taxi business is just one prominent example. Advances in digital payments are increasingly spurring mobile commerce, with far-reaching implications in financial services and retailing. The proliferation of smart devices unlocks growth opportunities, reduces the cost to develop services, and dramatically lowers barriers to entry.

**Big data and advanced analytics.**

Companies such as Amazon and Harrah’s are known for using customer data to personalize and tailor their services. Continued advances in analytic capabilities allow companies to draw insights from massive, previously untapped sources, leading to new service possibilities. SATMAP, for example, is a software solution that uses advanced analytics to improve service in call centers. It helps companies match callers to service agents with appropriate personalities, resulting in higher rates of customer satisfaction and service-to-sales conversion.

**The Internet of Things.**

Pervasive machine-to-machine (M2M) connectivity is already facilitating real-time service delivery in a number of B2B applications, such as the sensors GE uses in aircraft engines to monitor performance and improve the efficiency of maintenance. In the B2C space, Nest (recently acquired by Google) uses M2M connectivity to link its smart thermostats to other home devices, including washing machines and personal-fitness bands, thus positioning the company as the network hub in a digitally connected home. The prevalence of connected devices opens up possibilities for proactive, even “touchless” service, as well as new commercial models quite unlike the traditional fee-for-service one.

**1.4 What is the service economy?**

~~The service economy in developing countries is mostly concentrated in~~[~~financial services~~](https://en.wikipedia.org/wiki/Financial_services)~~,~~[~~hospitality~~](https://en.wikipedia.org/wiki/Hospitality)~~,~~[~~retail~~](https://en.wikipedia.org/wiki/Retail)~~,~~[~~health~~](https://en.wikipedia.org/wiki/Health_services)~~,~~[~~human services~~](https://en.wikipedia.org/wiki/Human_services)~~,~~[~~information technology~~](https://en.wikipedia.org/wiki/Information_technology)~~and~~[~~education~~](https://en.wikipedia.org/wiki/Education)~~. Products today have a higher service component than in previous decades. In the management literature this is referred to as~~**~~the servitization of products~~**~~or a~~[~~product-service system~~](https://en.wikipedia.org/wiki/Product-service_system)~~. Virtually every product today has a service component to it.~~

**Service economy** refers to one or both of two recent economic developments:

The first one is that the increased importance of the service sector in industrialized economies. The current list of [Fortune 500](https://en.wikipedia.org/wiki/Fortune_500) companies contains more service companies and fewer manufacturers than in previous decades.

The second one is that the relative importance of service in a product offering. The service economy in developing countries is mostly concentrated in financial services, [hospitality](https://en.wikipedia.org/wiki/Hospitality), retail, health, [human services](https://en.wikipedia.org/wiki/Human_services), information technology and education. Products today have a higher service component than in previous decades. In the management literature this is referred to as **the servitization of products** or a [product-service system](https://en.wikipedia.org/wiki/Product-service_system). Virtually every product today has a service component to it.

**1.5 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.~~

**1.5.1 Financial drivers**

The financial driver is reflected in improved profit margins and stable income, that come with servitization. In the increasing price competition among product offering, companies can use services to recover the lost potential revenue. Moreover, the servitization levels the seasonality of the product and increases life cycles of the complex products.

**1.5.2 Strategic drivers**

Strategic drivers mainly focus on gaining and securing the competitive advantage by the company. In order for the company to be able to achieve sustainable competitive advantage, its resources should be valuable, rare, difficult to imitate and organised.

**1.5.3 Marketing and sales drivers**

As services are provided on a long-term basis rather than one-time sale they offer more time to build the relationship with the customers and allow supplier to create the brand. Moreover, it enables the sales team to influence the purchasing decisions, by giving them opportunities to upsell additional product extension or other complementing parts of the product.

**2 Specialisation and service-oriented models of business**

**2.1 Traditional organisations and specialised organisations**

**2.1.1 Traditional organisations**

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

**2.1.2 Specialised organisations**

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. Football, expedia;

* **Smart services (the internet of things)**

Pacific Control in Dubai, eg. China’s smart grid;

* **New models of business**

Rolls-Royce, eg. fishing in India and banking in Africa;

Amazon, eg. flying planes or flying passengers.

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

**2.3.1 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.

**2.3.2 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.