**Lecture 10**

**Innovation**

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Innovation is the ability to *apply* creative solutions to those problems and opportunities to enhance or enrich people’s lives.

Innovation can be categorization based upon

1. Form of Innovation (Application)
2. Degree of Novelty
3. **Form of Innovation (Application)**

Entrepreneurial innovation encompasses not only new products and services but also new business models. There are three principles form of Innovation:

1. Product Innovation
2. Service Innovation
3. Process Innovation
   1. **Product Innovation**

Product innovations loom large in the public imagination. Products, especially consumer products are probably the most obvious innovation application.

Example:

The Dyson bagless vacuum cleaner is an example of a product innovation. James Dyson developed what he terms ‘dual cyclone’ technology (Dyson, 1997) and used it to create a new more efficient vacuum cleaner. What is ‘innovative’ about it, is that it functions in a quite different way from a conventional vacuum cleaner. It is still a vacuum cleaner and it does what vacuum cleaners have always done, it extracts dust and other items of household debris from carpets and upholstery. But the innovation lies in the way in which it functions. Instead of employing a fan to suck dust into a bag, it dispenses with the bag and uses Dyson’s patented ‘dual cyclone’ technology to extract dust and place it in a clear plastic container.

From a commercial perspective the attraction of product innovations is that the novelty of a new product will persuade consumers to make a purchase. It is no surprise that ‘new product development’ is one of the four business strategies put forward by Ansoff for the future development of a business. Of course product innovations don’t have to be consumer products; they can just as easily be industrial products such as machinery and equipment.

* 1. **Service Innovation**

Often overlooked but equally important are service innovations that take the form of new service applications. One reason why service innovations don’t attract as much attention as product innovations is that they are often less spectacular and less eye catching.

Service innovations typically take the form of a new way of providing a service, often with a novel and very different business model.

Example:

The creation of the ‘Direct Line’ telephone insurance business is a good example of the first type of service innovation. For years the insurance business had been transacted via high street outlets, door-to-door, by post or through intermediaries known as insurance brokers.

Sometimes one gets innovations that take the form of completely new services. Ebay, the internet auction, and Lastminute.com the clearing house for late bookings on anything from holidays to gifts, would probably come under this heading.

* 1. **Process Innovation**

Process innovations often have an even bigger impact on society than either product or service innovations.

Although generally less well known than product innovations, examples of process innovations, including ones that have had a dramatic impact on society as a whole, abound.

Example:

Much less well known, but just as significant in terms of its impact on society, is the Float Glass process, in which plate glass is manufactured by drawing glass out across a bed of molten tin. Prior to the introduction of this process innovation, plate glass used for shop windows and office windows was expensive and of poor quality largely because the only way of getting a flat surface was to grind it and polish it.

Process innovations often have a big impact on the economics of production.

Today a similar revolution in production is taking place, but this time the revolution is occurring not on the factory floor but in the office. Business-to-business (B2B) Ecommerce is dramatically reducing the need for paperwork and those who process paper, namely administrators. It is no surprise that all sorts of business organizations from airlines to insurance companies offer a discount for buying online. Buying online means less paper and money spent processing paper.

**TYPES OF INNOVATION**

It has long been noted that one can differentiate innovations in terms of the degree of novelty associated with them. Some innovations employ a high degree of novelty, while others involve little more than ‘cosmetic’ changes to an existing design. This distinction between big change and small changes innovations has led some to group innovations as either:

1. Radical Innovation
2. Incremental Innovation
3. Modular Innovation
4. Architectural Innovation

Henderson and Clark’s (1990) analytical framework provides a typology that allows us to analyse more modest innovations and at the same time predict their impact in terms of both competition and the marketplace. Although this typology focuses primarily on product innovations it can equally be applied to service and process innovations. At the heart of Henderson and Clark’s analytical framework is the recognition that products are actually systems. As systems they are made up of components that fit together in a particular way in order to carry out a given function.

Henderson and Clark (1990) point out that to make a product normally requires two distinct types of knowledge:

* **Component knowledge:**

Knowledge of each of the components that performs a well defined function within a broader system that makes up the product.

* **System knowledge:**

The knowledge about how the system works and how the various components are configured and work together.

Example:

The modern automatic washing machine has been subjected to a variety of types of innovation. The washing machine is a system for washing for clothes. The components comprise: motor, pump, drum, programmer, chassis, door and body. These components are linked together into an overall system. Component knowledge is the knowledge that relates to each of the components. System knowledge on the other hand is about the way in which the components interact.

1. **Incremental Innovation**

Incremental innovation refines and improves an existing design, through improvements in the components.

Examples: In the case of the washing machine example used earlier, incremental innovation would be case of offering a machine with a more powerful motor to give faster spin speeds.

1. **Radical Innovation**

Radical innovation is about much more than improvements to existing designs. A radical innovation calls for a whole new design, ideally using new components configured in a new way. Radical innovation is often associated with the introduction of a new technology.

1. **Modular Innovation**

Modular innovation uses the architecture and configuration associated with the existing system of an established product, but employs new components with different design concepts.

1. **Architectural Innovation**

With architectural innovation, the components and associated design concepts remain unchanged but the configuration of the system changes as new linkages are instituted.

**References:**

https://www.kbresearch.com/concept-docs/Types\_of\_Innovations\_-\_file.pdf