Concept of Entrepreneurship

Entrepreneurship is the ability and readiness to develop, organize and run a business enterprise, along with any of its uncertainties to make a profit. The most prominent example of entrepreneurship is the starting of new businesses.

In economics, entrepreneurship connected with land, labour, natural resources, and capital can generate a profit. The entrepreneurial vision is defined by discovery and risk-taking and is an indispensable part of a nation's capacity to succeed in an ever-changing and more competitive global marketplace.

Entrepreneurship is the creation or extraction of economic value in ways that generally entail beyond the minimal amount of risk (assumed by a traditional business), and potentially involving values besides simply economic ones. More narrow definitions have described entrepreneurship as the process of designing, launching and running a new business, often similar to a small business, or (per *Business Dictionary*) as the "capacity and willingness to develop, organize and manage a business venture along with any of its risks to make a profit" The people who create these businesses are often referred to as "entrepreneurs" While definitions of entrepreneurship typically focus on the launch and operation of businesses, due to the high risks involved in launching a startup company, a significant proportion of startups have to close (in Mikal Belicove's words) due to "lack of funding, bad business decisions, government policies, an economic crisis, a lack of market demand, or a combination of all of these."

Meaning of Entrepreneur

The entrepreneur is defined as someone who has the ability and desire to establish, administer and succeed in a startup venture along with risk entitled to it, to make profits. The best example of entrepreneurship is the starting of a new business venture. The entrepreneurs are often known as a source of new ideas or innovators and bring new ideas in the market by replacing old with a new invention. An **entrepreneur** is an individual who creates and/or invests in one or more businesses, bearing most of the risks and enjoying most of the rewards. The process of setting up a business is known as "entrepreneurship". The entrepreneur is commonly seen as an innovator, a source of new ideas, goods, services, and business/or procedures.

It can be classified into small or home business to multinational companies. In economics, the profits that an entrepreneur makes is with a combination of land, natural resources, labour and capital.

In a nutshell, anyone who has the will and determination to start a new company and deals with all the risks that go with it can become an entrepreneur.

Types of Entrepreneurships

It is classified into the following types:

Small Business Entrepreneurship-

These businesses are a hairdresser, grocery store, travel agent, consultant, carpenter, plumber, electrician, etc. These people run or own their own business and hire family members or local employee. For them, the profit would be able to feed their family and

not making 100 million business or taking over an industry. They fund their business by taking small business loans or loans from friends and family.

Scalable Startup Entrepreneurship-

This start-up entrepreneur starts a business knowing that their vision can change the world. They attract investors who think and encourage people who think out of the box. The research focuses on a scalable business and experimental models, so, they hire the best and the brightest employees. They require more venture capital to fuel and back their project or business.

Large Company Entrepreneurship-

These huge companies have defined life cycle. Most of these companies grow and sustain by offering new and innovative products that revolve around their main products. The change in technology, customer preferences, new competition, etc., build pressure for large companies to create an innovative product and sell it to the new set of customers in the new market. To cope with the rapid technological changes, the existing organisations either buy innovation enterprises or attempt to construct the product internally.

Social Entrepreneurship-

This type of entrepreneurship focuses on producing product and services that resolve social needs and problems. Their only motto and goal are to work for society and not make any profits.

Characteristics of Entrepreneurship:

Not all entrepreneurs are successful; there are definite characteristics that make entrepreneurship successful. A few of them are mentioned below:

- **Ability to take a risk-** Starting any new venture involves a considerable amount of failure risk. Therefore, an entrepreneur needs to be courageous and able to evaluate and take risks, which is an essential part of being an entrepreneur.

- **Innovation-** It should be highly innovative to generate new ideas, start a company and earn profits out of it. Change can be the launching of a new product that is new to the market or a process that does the same thing but in a more efficient and economical way.

- **Visionary and Leadership quality-** To be successful, the entrepreneur should have a clear vision of his new venture. However, to turn the idea into reality, a lot of resources and employees are required. Here, leadership quality is paramount because leaders impart and guide their employees towards the right path of success.

- **Open-Minded-** In a business, every circumstance can be an opportunity and used for the benefit of a company. For example, Paytm recognised the gravity of demonetization and acknowledged the need for online transactions would be more, so it utilised the situation and expanded massively during this time.

- **Flexible-** An entrepreneur should be flexible and open to change according to the situation. To be on the top, a businessperson should be equipped to embrace change in a product and service, as and when needed.

- **Know your Product-**A company owner should know the product offerings and also be aware of the latest trend in the market. It is essential to know if the available product or service meets the demands of the current market, or whether it is time to tweak it a little. Being able to be accountable and then alter as needed is a vital part of entrepreneurship.

Importance of Entrepreneurship:

- **Creation of Employment-** Entrepreneurship generates employment. It provides an entry-level job, required for gaining experience and training for unskilled workers.

- **Innovation-** It is the hub of innovation that provides new product ventures, market, technology, and quality of goods, etc., and increase the standard of living of people.

- **Impact on Society and Community Development-** A society becomes greater if the employment base is large and diversified. It brings about changes in society and promotes facilities like higher expenditure on education, better sanitation, fewer slums, a higher level of homeownership. Therefore, entrepreneurship assists the organisation towards a more stable and high quality of community life.

- **Increase Standard of Living-** Entrepreneurship helps to improve the standard of living of a person by increasing the income. The standard of living means, increase in the consumption of various goods and services by a household for a particular period.

- **Supports research and development-** new products and services need to be researched and tested before launching in the market. Therefore, an entrepreneur also dispenses finance for research and development with research institutions and universities. This promotes research, general construction, and development in the economy.

Importance of Entrepreneurship Skills

Entrepreneurship skills are essential in positioning entrepreneurs to identify opportunities, make effective decisions, turn their ideas into reality, overcome challenges, and properly allocate resources to achieve goals and succeed. The importance of entrepreneurship skills lies in:

- Encouraging social change and improving lives
- Creating employment opportunities for others
- Driving economic growth and opening new markets and industries
- Improving the quality of life with new ideas and building functional products or services
- Providing opportunities for personal and professional growth, as well as financial

rewards
- Enhancing one's capacity to work efficiently alone, as well as in collaboration
- Reaching the desired goals and achieving excellent results

Top 10 Entrepreneurial Skills

1. Business Management Skills

Business management skills are essential for entrepreneurs to effectively plan, organize, direct, and control the resources of an organization. These skills can build credibility, improve efficiency, manage risks, implement effective strategies, create a positive company culture, and grow a business.

Business management skills include:

- Leadership
- Strategic thinking
- Budget management
- Business acumen
- Communication

2. Communication and Listening

Communication skills allow individuals to express thoughts, ideas, and feelings clearly through speaking, writing, and other forms of expression. Listening skills provide the ability to understand and retain information and respond appropriately. Both communication and listening are essential entrepreneurship skills that can make a difference in how you run your business as they help you to build trust, maintain relationships, resolve conflicts, understand needs and perspectives, and make informed decisions.

Communication and listening skills include:

- Written communication
- Non-verbal communication
- Stress management
- Active listening
- Emotion control

3. Critical and Creative Thinking Skills

Strong critical and creative thinking skills are essential for entrepreneurs to build and expand their businesses. Critical thinking allows you to objectively analyze information using the evidence to make informed decisions and solve problems. Creative thinking provides a way to look at issues from various angles, consider alternative perspectives, and come up with original ideas.

Critical and creative thinking skills include:

- Analysis

- Brainstorming
- Visualization
- Evaluation
- Research

4. Strategic Thinking and Planning Skills

Strategic thinking and planning skills allow entrepreneurs to analyze information, adapt, manage projects, solve problems, and make informed decisions. These entrepreneurship skills are vital in helping leaders overcome challenges and ensure efficient allotment of resources and achievement of goals.

Strategic thinking and planning skills include:

- Analysis
- Implementation
- Flexibility
- Attention to detail
- Assertiveness

5. Branding, Marketing, and Networking Skills

In today's competitive business environment, branding, marketing, and networking skills are essential for scaling the business and boosting opportunities. These skills enable entrepreneurs to promote and sell products or services. Branding creates a unique and memorable image of a product, service, or organization, and marketing promotes them to target consumers. Networking builds relationships and allows individuals to connect with potential customers, partners, suppliers, or colleagues.

Branding, marketing, and networking skills include:

- Collaboration
- Communication
- Interpersonal skills
- Creativity
- Collaboration

6. Entrepreneurial Skills in the Workplace

The skills in the workplace refer to qualities that enable individuals to effectively create and manage their businesses, as well as drive innovation and growth within organizations.

Entrepreneurial skills in the workplace include:

- Time management
- Finance skills
- Sales
- Adaptability
- Problem-solving

7. Teamwork and Leadership Skills

Teamwork and leadership are highly critical entrepreneurship skills that foster a positive and collaborative organizational culture, leading to increased employee satisfaction and improved performance. These qualities can enable leaders to effectively inspire, motivate, work in teams, and lead the company toward success.

Teamwork and leadership skills include:

- Communication
- Emotional intelligence
- Empathy
- Delegation
- Conflict resolution

8. Time Management and Organizational Skills

Great leaders should know how to delegate and prioritize tasks, manage their time and resources, and maintain a well-structured and efficient work environment. Effective time management and organization skills can enable you to achieve goals, manage stress, maintain a healthy work-life balance, and improve well-being and satisfaction.

Time management and organizational skills include:

- Prioritizing
- Goal setting
- Multi-tasking
- Decision making
- Collaboration

9. Sales Skills

Sales skills are vital for salespeople and valuable for entrepreneurs, as they need to know how to sell their businesses to potential customers and investors. Developing sales skills can help entrepreneurs make sales, pitch ideas, negotiate, and create great relationships with their customers, investors, and stakeholders to build a strong business.

Sales skills include:

- Business acumen
- Negotiation
- Relationship-building
- Data analysis
- Social selling

10. Stress Management Skills

Leading a business can take a toll on an entrepreneur’s well-being. They need to know how to efficiently manage and cope with stress for themselves, their employees, and

their business. Stress management skills allow leaders to maintain good physical and mental health, enhance personal and professional relationships, and improve the overall quality of life.

Stress management skills include:

- Meditation
- Positive thinking
- Mindfulness
- Sleep hygiene
- Exercise

How to Develop Entrepreneurial Skills

Here are some ways to develop your entrepreneurship skills:

- **Define goals:** Establish your business objectives, strengths, weaknesses, and what you want to achieve
- **Learn:** Podcasts, books, and seminars can be great sources of information to enhance your skills
- **Take online courses:** Online courses are an excellent way to boost the skills you want to develop
- **Look for a mentor:** Mentorship can make a significant impact on your life and career; seek mentorship from successful leaders to enhance your skills
- **Work hard:** Develop a strong work ethic and be consistent in your efforts to grow
- **Be adaptable:** Stay open to change and embrace new ideas and opportunities as they arise
- **Foster a growth mindset:** Focus on continuous learning and seek out new opportunities to develop your skills

Examples of Entrepreneurial Skills

Here are a few examples of entrepreneurial skills:

- Mentorship
- Reliability
- Responsibility
- Strategic thinking
- Delegation
- Risk-taking
- Empathy
- Networking
- Creativity
- Innovation
- Problem-solving
- Flexibility
- Conflict resolution
- Financial skills
- Customer service

ENTREPRENEURIAL VALUE

Given the global awareness of the value of entrepreneurial activity in economic and societal life, it remains a challenge to investigate and develop understanding around the elements that prohibits progressive thinking. Africa has an unemployment epidemic resonating around 25%. The only way to eradicate unemployment is through job creation. New businesses are seen to do just that and generate jobs according to Birch (1987, 1995).

New firms may operate as an important alternative employment mechanism for many subsets of the adult age population (Acs, 1996; Audretsch, 2002; Michelacci, 2003). Graduates in the faculty of electrical engineering, CPUT, is potentially one such subset who could contribute to the South African economy, generating wealth and providing much needed jobs in the high technology sector. The high concentration of job creation was expropriated by a small group of entrepreneurs, namely high-expectation entrepreneurship that subscribes to rapid growth and high employment (GEM, 2006).

While entrepreneurial firms are synonymous with job creation (Birch, 1987), large, established firms were net destroyers of jobs. This is not necessarily a bad thing in the African context. The restructuring of corporation in most cases could reflect a growing economy, with a healthy influx of foreign investment thus encouraging companies to be more competitive. While a part of job creation by new firms undoubtedly reflects downscaling and restructuring of established firms, and therefore, job migration rather than job creation, economists agree that the genuine job creation potential of new firms is also significant.

Several studies suggest that only a relatively small proportion of all new firms end up generating the bulk of new jobs. Autio found this evidence to be regional yet consistent and reports that 5% of all entrepreneurs account for 80% of jobs. Highly dynamic firms are a product of creativity as well as experience (Autio,2005). Within the high technology sector, customers are price conscience as well as brand conscientious. The graduate may not possess the tools to market his entrepreneurial potential early on in his career. With new firms being to out-perform the old firms, could it be graduates with entrepreneurial intent join a new firm to energise the innovation process as well as reserving the right to join a large firm as an engineer with entrepreneurial intent.

BOOTSTRAPPING

Job creation comes about through the effort of an exclusive group of entrepreneurs. Autio (2005) and other are of the view that although variables like economy cycle, literacy rates and else, impacts on the ability of the country to be entrepreneurial, the bulk of job creation is underpinned by the efforts of 5% of all entrepreneurial effort. Entrepreneurship is key to the eradication of unemployment (GEM, 2001). The process of continuous engineering job creation can be realised through bootstrapping according to Douglas Engelbart (2003). Isaac Newton, a revolutionary scientist, acknowledges the contribution made by other scientist when he makes the statement that," If I have been able to see further, it was only because I stood on the shoulders of giants." Isaac Newton meticulously continued to build on the scientific discovery and theories of researchers like Aristotle and Galileo, who had developed philosophy regarding space, energy and matter. It is this commitment to scientific progress that lofted Newtonianism, forming the basis of our engineering understanding.

ENGINEERING ENTREPRENEURSHIP

Despite the huge interest in the subject, a definition of entrepreneurship is hard to pin down because of the different descriptions used by a multitude of authors (Drucker, 1999). Entrepreneurship has been used to describe creating, founding, adapting and managing a business (Drucker, 1999).

The Oxford Dictionary describes an entrepreneur as one who '….organises, manages

and assumes the risks and reaps the benefits of a new business enterprise or commercial venture.' Entrepreneurship is also believed to involve 'rethinking conventional paradigms, and discarding traditional ways of doing things' (Magnanti, 2005).

We in engineering don't study entrepreneurships; we do entrepreneurship. We create products and processes that people use. Together the combination of management and engineering provide an ideal underpinning for technological innovation and entrepreneurship concludes: D.T.L. Magnanti (2005).

Oxford dictionary defines; engineering as the discipline dealing with the art or science of applying scientific knowledge to practical problems. And also, it is defined as the applied science of acquiring and applying knowledge to design, analysis, and/or construction of works for practical purposes. However, in a fast changing world of technology engineers persist in their pursuit of the 'one right answer'. This is no longer sufficiently pragmatic to deal with the technological challenges the Africa faces. Engineers must be more creative, dealing with technical and non-technical issues (Lacquet, 2004).

The very nature of technical and non-technical speaks to integration. The nature of linearity and nonlinearity speaks to integration. Engineers require an integrated skills set to face a rapid changing world. This innovation, this fresh perspective could be synonymous with entrepreneurship. Engineering uses science to improve the lives of ordinary people (Ward & Angus, 1996), and entrepreneurship uses technology to resolve challenges in society. By implication, Magnanti (2005) is saying that entrepreneurship is the technological, creative and innovative arm of engineering. Small business is responsive to customer needs and perpetual change, but it remains business. Entrepreneurship is an innovation in response to customer needs based on engineering principles in a technological environment, thus it remains and engineering exercise. Engineers do entrepreneurship.

The view that this paper holds underpins the Schumpeter (1934) definition regarding successful ventures over time. In a technological environment, entrepreneurship speaks the same language as engineering, addressing social issues and developing policy to govern the paradigm thinking. The outcomes are the same and can be measured using engineering or entrepreneurial metrics. Entrepreneurship presents the engineer with different skills set and an altered perspective on the challenge at hand. Thus, engineering entrepreneurship addresses the social problems in rapid changing environment.

This responsiveness is critical to the enhancement of the African economy. New business creation is fundamental to the growth of the African economy and to our future sociopolitical stability. Education and experience are key elements in successful venture creation. Africa needs a growing pool of potential entrepreneurs who have the motivation and the ability to identify and to realise new business opportunities. While the role of new venture creation – and specifically its potential to solve the unemployment crisis

Entrepreneurship is relevant in a changing society and engineers have a role to play in job creation and developing sustainable endeavours. Engineers no longer control technical change; technology enforces technical change and engineering must be restructured to compete in a fast changing high technical environment. Albeit that technology dictates the pace of change, engineering underpins the existence of society, and it is thus incumbent on CPUT to drive projects and student thinking to absorb and understand the new dispensation.

Engineering entrepreneurship is relevant in Africa and student has identified the need for this new way of thinking. That entrepreneurship is the science of starting new

ventures is not a closed subject, it could be that entrepreneurial activity stimulates new venture creation or perhaps that the output to applied research could inadvertently, lead to the creation of a new venture.

Entrepreneurship must be related, directly or indirectly, to alternate thinking. Engineers must develop a set of skills to manage business challenges. These sorts of skills are generic to business thus and not new venture creation. Engineers develop artifacts and if commercialised, will yield a value, this is called business.