Tutorial 01

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Index No: - EP 426

PARADIGM CHANGE TIME TO TIME

1. **Explain the difference between personal and public communication?**

Category	Public Communication	Personal Communication
What is it?	• Public Communication means people like to flock together and enjoy	• Personal communication means a person will interact with another person to update his knowledge.
Its characteristics	• Essentially a unidirectional communication • There is no strict method of verifying the information. • The author of the service will carry his views.	• Essentially a bidirectional communication • The information can be verified instantaneously according to their mindset. • It is interactive. If you ask a question from another person you will not wait for a minute for his answer. Letters or e-mails are also a personal communication method but with delayed interaction.
Example	• A person will not be upset by requesting other person's newspaper to read. • Radio, TV, newspapers, websites etc.	• A person will be upset if he gets to know somebody is tapping into his telephone calls. • Chatting, gossiping, talking, telephone conversation.

2. **The way of the living of the people is changing from generation to generation. We have experience agricultural and industrial revolutions in the past. Explain the present day revolution?**

    Present day revolution is "Communication Revolution". This is critical turning point of the information sharing process. During the nineteenth century a series of technological innovations dramatically reshaped the way people communicated at a global level.

    New means of communication speeded the pace of life, and increased trade and the exchange of ideas.

❖ Peak points of the communication revolution in yesterday :

- Invention of the telephone (in 1875)

Alexander Graham Bell with a prototype telephone

The single-port design required the user to alternately speak into and then listen through the same hole.

- The first AM radio stations began to broadcast sound(in 1910 ,1920)

Old radio

- Television was broadcasting(in 1940)
- Creation of world fist electronic computer(in 1943)
- Invention of the microprocessor(in1970)
- Computer become accessible to the public(in 1990)
- Internet migration

❖ Peak points of the communication revolution in today:

- Observe vast information storage with quick access time. Distance become as independent factor.
- Saturation of traditional market of telephone industry.
    - Voice Communication is becoming an essential commodity for human. So today almost all person use telephone.

- In the past decade, the Internet has emerged as the newest of communication media. It gives users quick access to information from around the world. People can chat with friends (use Gmail, face book, Skype), read up to the minute news, and find samples of other media, such as music, movies, and books. However, the Internet required the construction of a considerable foundation before it became the information clearinghouse that is today.
  - Most of people use internet facilities also. (Universities, both private & government companies also us e this facilities to keep communication easily)
  - People can use special kinds of antenna (Dialog antenna) & watch TV channel which are broadcast in other countries also.
- Due to increase of the computation, storage, scientific data generation people getting closer further more.(Growth of mobile: 2G → 3G)

❖ Communication revolution in future:
  - Death the concept of"DISTANCE".
  - Wireless technology set will overtake traditional media.
  - Increase factors such as speed, storage further more.
  - Charges which are given for communication media will decrease.

3. **What are the future revolutions you can expect?**
   1. Transport Revolution
   2. Energy Revolution

🔸 Transport Revolution
With change with the way of living transport revolution occur like this.
- LAND
  In the early days of settlement most people travelled from one place to another on foot as there were only a few horses and bullocks available.

  Bicycle →
  Bicycle riding became a very popular way to travel around our cities and towns in the 1890's. The 'Boneshaker' was one of the earliest cycles. It was constructed in 1869 and it was called the 'Boneshaker' because it caused the whole body to shake as it moved.

The 'Penny-farthing' was introduced in the 1880's. It had a very large wheel at the front and a smaller wheel at the back.

By the 1890's children were able to cycle on treadle bicycles. Cycling was a cheap, reliable and healthy way to travel. Many children rode bicycles to school however, they did not have to worry about the amount of traffic that there is today.

Automobile/ motor car → it was a wheeled motor vehicle used for transporting passengers, which also carries its own engine or motor. In 1879, Benz was granted a patent for his first engine, which had been designed in 1878. Many of his other inventions made the use of the internal combustion engine feasible for powering a vehicle.

A photograph of the original *Benz Patent Motorwagen*, first built in

Ford Model T, 1927, regarded as the first affordable American automobile patent

Electric buses →
 This is a bus powered by electricity.

Natural gas buses →
A natural gas vehicle or NGV is an alternative fuel vehicle that uses compressed natural gas (CNG) or, less commonly, liquefied natural gas (LNG) as a clean alternative to other automobile fuels.

Solar vehicle →
A solar vehicle is an electric vehicle powered by solar energy. This is obtained from solar panels on the surface (generally, the top) of the vehicle. Photovoltaic (PV) cells convert the sun's energy directly into electrical energy.

Solar vehicles are not practical day-to-day transportation devices at present, but are primarily demonstration vehicles and engineering exercises, often sponsored by government agencies.

- AIR

Hot air balloons →

[Although used today for sport, weather and recreation purposes] were considered a type of transport in the early days.

In 1908 The Wright brothers go to Europe to speed up the development of flight. This is a critical point of the transport system. Gliders also used those days.

Supersonic aircraft →

In aviation, a supersonic aircraft is one that is designed to exceed the speed of sound in at least some of its normal flight configurations.

Flying cars (aircraft)→

A flying car or road able aircraft is a vehicle which can travel on roads and in the air. It is both an aircraft and an automobile.

Jetpacks →

Jet pack, rocket belt, rocket pack, and similar names, are various types of device, usually worn on the back, that use jets of escaping gases (or in some cases liquid water) to allow a single user to fly.

- SEA

Sailing ships →

Every sailing ship has a hull, rigging and at least one mast to hold up the sails that use the wind to power the ship.

Clipper ships →

Clipper was a very fast sailing ship of the 19th century that had multiple masts and a square rig.

Steam boat →
A steamboat or steamship, sometimes called a steamer, is a ship in which the primary method of propulsion is steam power, typically driving propellers or paddlewheels.

Passenger ferries →
A ferry (or ferryboat) is a form of transportation, usually a boat, but sometimes a ship, used to carry (or *ferry*) primarily passengers, and sometimes vehicles and cargo as well, across a body of water. Most ferries operate on regular, frequent, return services. A passenger ferry with many stops, such as in Venice, is sometimes called a water bus or water taxi.

Naval vessels →
A naval ship is a ship used for combat purposes, commonly by a navy. Naval ships are differentiated from civilian ships by construction and purpose.

Super-cruise ships, Fast Ferries, Underwater rail systems are future of transport related to sea.

🞢 Energy Revolution
With change with the way of living energy revolution occur like this :
3000 years ago people discovered coal, oil, natural burnt. Those are called as fossil fuels. In the future, civilization will be forced to research and develop alternative energy sources. Our current rate of fossil fuel usage will lead to an energy crisis this century. In order to survive the energy crisis many companies in the energy industry are inventing new ways to extract energy from renewable sources. While the rate of development is slow, mainstream awareness and government pressures are growing. So there is a trend to find about alternative energies.

Ambient energy fueled mechanical and electric power plant (AEFMEPP) →
A system for generating mechanical and or electric power using low grade thermal or electro-magnetic energy reservoirs, such as air, water and incident light to fuel the power generation cycle.

Energy with human power →

That may be a little aggressive, but Princeton University engineers have developed a device that may change the way that we power many of our smaller gadgets and devices. By using out natural body movement, they have created a small chip that will actually capture and harness that natural energy to create enough energy to power up things such as a cell phone, pacemaker and many other small devices that are electronic.
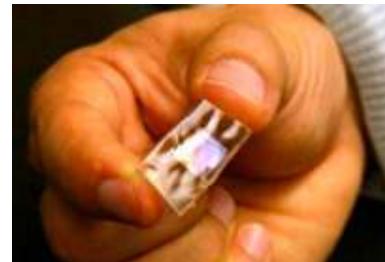
Light powered circuit →

This is a circuit that can power itself, as long as it's left in a beam of sunshine.
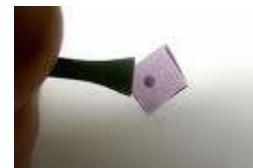
(The brain of any electronic device is the circuitry that operated the machine. Without the circuitry, the device is not even worth the cost of the plastic that it is made of. Any electronics device requires some kind of battery or it is nothing more than a paperweight. Recently, some new technology was created by scientists that will no longer require a device to use a battery as the power can come from light-powered circuitry.)

New solar pond distillation system →

This new solar distillation system will help in removing the salinity of the lake water. This will be possible with the help of a specialized low-cost solar pond and patented membrane distillation system deriving power by renewable energy.

Bio-fuels from engineered tobacco plants →

Try to develop a new method to increase the quantity of oil in tobacco leaves. So that oil in tobacco leaves can be utilized as bio fuels in future.

4. **In 1950's travel to England from Sri Lanka was taking 6 months Time, with the only available transport of ships. Today it will take 12 hours from the Airplane.**

  I. **What are the factors that have to be considered for the change of living of the people from evolutions?**

     - Efficiency increase
     - Productivity increase
     - Effectiveness increase
     - Save time
     - Rapidity increase
     - Save cost for laborious

  II. **Calculate how efficient to go to England by Airplane?**

By ship	=	6 * 30 * 24 hr
By airplane	=	12 hr
Efficient to go to England by Airplane	=	((6 * 30 * 24) / (12))*100 %
		36000 %

  III. **Similarly calculate the efficiency of sending a letter by post or with E-Mail from Belihuloya to your home?**
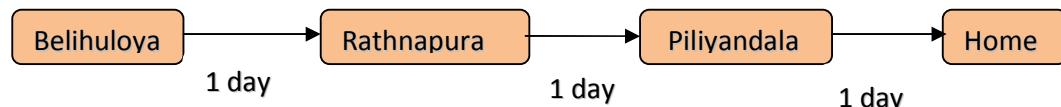
Number of days spend for sending a letter	= 3 days (3 * 24 * 60 * 60 second)
Time spend for email	=1 second
Efficient to send a message by email	= ((3 * 24 * 60 * 60)/1) *100 %
	259200 %

5. **Productivity and effectiveness will be much improved from generation to generations. Describe past, present and future effects on above with relation to transport technology or energy technology or communication technology?**

Transport

In past transport got very low level. As an example 50 years ago, Sri Lanka was having bullock carts for transport. The first bicycle was a velocipede with no pedals. Later on, they became ordinaries with a huge front wheel and a small rear wheel. Then they became safeties with equal size wheels and ran on a chain. Bicycling stopped in the 1890's, but it came back in the 1970's due to gasoline shortage. With time past generation to generation; car, bus and so many transport media come to the world.

Using only one telephone call, you can get transport service very quickly by cab service. That means our productivity and effectiveness increase more and more. Finding the air transport media can consider as turning point of the transport revolution. In 1908 The Wright brothers go to Europe to speed up the development of flight. Today it become as very popular and efficient media. By few hours you can go another country. But its cost is high. In future flight will be safe, fast and cheap. Airplanes will be more fuel efficient. Most airplanes will fly at super sonic. When consider about transport, It is need to talk about space fight also. Apollo space mission landed men on the moon in 1969. The first successful moon landing was Apollo11. Now trend is space shuttle. A space shuttle works by fuel or gasoline, running thru the engine. It is controlled in the gas chamber by the fuel.

The fuel tanks a separator that separate the shuttle from the boosters that give it lift. The future space ships are safer than today's space ships. The future of the space shuttle would be faster and a lot safer .I think that they will be able to land on the sun. They will not take as long to go from one planet to the other.

Communication
In past distance became as a major problem to people for keep communication with each other. More centuries ago people had not any vehicle. They go to see their relations by foot. So keep high communication became a big task to them. After came postal system, communication power increased. That means people's productivity and effectiveness became in high level. Then telephone came , first AM radio stations began to broadcast sound , Television was broadcasting, creation of world fist electronic computer, Invention of the microprocessor, Computer becomes accessible to the public, Internet migration. Due to these developments our productivity increases. Our effectiveness increase more and more. Early time sending message by letter take 2 or 3 days with in same area. But now we can send message to anyone in the world by 1 or 2 second. Due to these increase worlds also develop further more.

6. **Using search engines available in the internet, write in detail about the future revolutions on transport and energy and the present development on those things (provide references)?**

Transport Revolution
Most of time lives of people around the world, particularly in developed countries, depend on relatively inexpensive movement of people and goods. But there is a big problem arises with this which can be high light as "rising cost". Costs could rise significantly due to the needs to reduce pollution, reverse urban sprawl, enhance security and, above all, use fuel that will become dramatically more expensive than those used now. Some transport methods are:

- Failing of public urban transportation → DIAL-A-BUS
  (DEMAND-ACTIVATED BUS SYSTEM)
  Which is a hybrid between an ordinary bus and a taxi could be the basis for such flexibility. It would pick up passengers at their doors or at a nearby bus stop shortly after they have telephoned for service. The computer would know the location of its vehicles, how many passengers were on them, and where they were heading. It would select the right vehicle and dispatch it to the caller according to some optimal routing program which had been devised for the system. Thus, the system could readily link many origins to many destinations.
- Air-propelled train → an atmospheric railway uses air pressure to provide power for propulsion. A pneumatic tube is laid between the rails, with a piston running in it suspended from the train through a sealable slot in the top of the tube.
  E.g.: The Aeromovel Corporation markets an automated people mover that is air driven. The elevated lightweight trains ride on a concrete box girder containing electric motors that drive air inside the girder, creating a constant airflow. Each car has a square plate protruding into the box girder. The plate is rotated into the airflow to catch the wind and accelerate the car.
- Flying car (aircraft) →this is an automobile that can legally travel on roads and can take off, fly, and land as an aircraft.
- Flying car (fiction)   →   a car that can be flown in much the same manner as a road car may be driven.
- Hover board → this is a fictional hovering board used for personal transportation in the films *Back to the Future Part II* and *Back to the Future Part III*. Resemble a skateboard without wheels or trucks. Several companies have drawn on hovercraft technology to attempt to create hover board-like products but none have demonstrated similar experiences to those depicted in the movies.
- Hyper drive car → a name given to certain methods of traveling faster-than-light (FTL) in science fiction. Related concepts are jump drive and warp drive.
- Solar sails →also called light sails or photon sails are a form of spacecraft propulsion using the radiation pressure of light from a star or laser to push enormous ultra-thin mirrors to high speeds.
- Personal rapid transit (PRT) →

  Also called personal automated transport (PAT) or pod car, is a public transportation concept that offers on-demand, non-stop transportation, using small, automated vehicles on a network of specially-built guide ways. From an engineering standpoint, they can be envisioned as very small subway cars, sometimes as small as three seats.

- Magnetic levitation → this is a system of transportation that suspends guides and propels vehicles, predominantly trains, using magnetic levitation from a very large number of magnets for lift and propulsion.
  This method has the potential to be faster, quieter and smoother than wheeled mass transit systems.

- Slide walk → this is a fictional moving sidewalk structurally sound enough to support buildings and large populations of travelers. Adjacent slidewalks moving at different rates could let travelers accelerate to great speeds.

- Space elevator → this is a proposed structure designed to transport material from a celestial body's surface into space.

- Tractor beam → this is a hypothetical device with the ability to attract one object to another from a distance. Tractor beams are frequently used in science fiction

- Teleportation → this is the transfer of matter from one point to another, more or less instantaneously. Teleportation widely utilized in works of science fiction

- Motorized bicycle → this is a bicycle with an attached motor used to power the vehicle, or to assist with pedaling. Sometimes classified as a motor vehicle, or a class of hybrid vehicle, motorized bicycles may be powered by different types of engines.
  (A bike equipped with an aftermarket electric hub motor conversion kit, with the battery pack placed on the rear carrier rack)

- Jet pack, rocket belt, rocket pack → these are various types of device, usually worn on the back, that use jets of escaping gases (or in some cases liquid water) to allow a single user to fly.

Energy Revolution
- Modern society dependence on low-cost Energy sources. It is need to propose organizational and technical innovations that could ensure effective, secure movement of people and goods in ways that minimize environmental impacts and make the best use of renewable sources of energy.

- Bio fuel → liquid fuels derived from plant materials which are entering the market, driven by factors such as oil price spikes and the need for increased energy security.
    - Bio-alcohol (Ethanol fuel)
    - Green Diesel
      (A form of diesel fuel which is derived from renewable feedstock rather than the fossil feedstock used in most diesel fuels. Green diesel feedstock can be sourced from a variety oils including canola, algae, jatropha and salicornia in addition to tallow.
      Green diesel was used to power at least one vehicle during a transportation showcase at the 2009 United Nations Climate Change Conference in Copenhagen, Denmark in December 2009.)
    - Biogas
      (Produced by the process of anaerobic digestion of organic material by anaerobes) It can be produced either from biodegradable waste materials or by the use of energy crops fed into anaerobic digesters to supplement gas yields.)
    - Biodiesel
      (Refers to a vegetable oil or animal fat-based diesel fuel consisting of long-chain alkyl methyl or ethyl) Biodiesel is typically made by chemically reacting lipids. As shown in figure, in some countries biodiesel is less expensive than conventional diesel.)
    - Vegetable oil
      (An alternative fuel for diesel engines and for heating oil burners) For engines designed to burn #2 diesel fuels, the viscosity of vegetable oil must be lowered to allow for proper atomization of the fuel; otherwise incomplete combustion and carbon build up will ultimately damage the engine.)
    - Fuel ethers
      (Cost-effective compounds that act as octane rating enhancers)They also enhance engine performance, whilst significantly reducing engine wear and toxic exhaust emissions.)
    - Syngas
      (A mixture of carbon monoxide and hydrogen is produced by partial combustion of biomass, that is, combustion with an amount of oxygen that is not sufficient to convert the biomass completely to carbon dioxide and water. Before partial combustion the biomass is dried, and sometimes pyrolysed.The resulting gas mixture, syngas, is itself a fuel. Using the syngas is more efficient than direct combustion of the original bio-fuel; more of the energy contained in the fuel is extracted.)

References:
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- http://www.ruf.dk/maxi/index.htm
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- http://en.wikipedia.org/wiki/Flying_car
- http://en.wikipedia.org/wiki/Hoverboard

7. **50 years ago, Sri Lanka was having bullock carts for transport, postal system for letters and radio for public communication. Today the paradigm changed to motor vehicles, E-Mails, and TV respectively. Today the systems are efficient. Will that mean the old generation lived unhappily? Explain your views.**

No. It is not.

The paradigm changes with revolutions. The revolutions will take may be 100 years.
With the time human change their way of living. There are three major parameters available for these changes. Such as

- Efficiency
- Productivity
- Effectiveness

That means the revolutions will make human more efficient than previous.

Efficiency can be representing as follows;

Efficiency =   (The resources needed to do a job according to your mind set)/
   (Actual resources we used according to present day technology)

Now we consider about the some special points which are show paradigm change clearly.

- Postal system / e – mail system → 50 years ago, people use postal system. Their aim is keep communication. In simply, if they want to send a message to another person they use postal system. By using this system they satisfied their needs and expectation. But today people use e – mail system to send message. This system is very faster than early one. It's true. But when we compare them, it's clearly show that both ways are satisfy same needs. Different is that today system is more effective.

- Bullock carts / motor vehicle → 50 years ago, people use bullock carts for transport. Their aim is travel from one point to another point. By using bullock carts they satisfied their needs and expectation. But now people use motor vehicle for transport. That means both methods satisfy needs. But today method is more effective way than earlier method.

- Radio / Television → 50 years ago, people use radio for get information and update their knowledge. Today television widely use for this purpose. Both are satisfy same needs. But television is more attractive than radio. Because, it provide visual information also.

When we consider about above sets, all are satisfy needs. But efficiency, productiveness and effectiveness difference. Postal system, bullock carts and radio satisfy needs and expectation of people. So they did not unhappy about these things. At that time they do not know about the e _ mail system, motor car and television. So they use previous things and success their works. After coming new methods, paradigm change.

8.
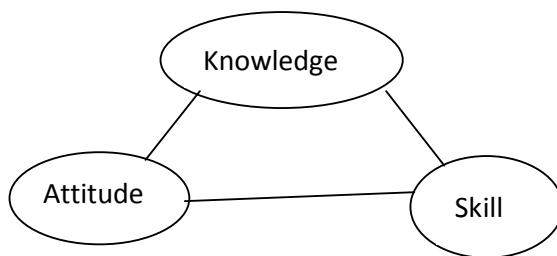
The above three areas has to be developed by any human being in any paradigm. Explain the difference between the above three factors and how do you implement to improve your life, for a successful future?

To improve personal abilities and personal communication; need to develop three factors such as

- Knowledge
- Attitude
- Skills

Today's MIND is busier than Yesterday. No proper training on controlling the Mind will lead to depression, drugs, frustration, suicide, porn addiction and unhappy leading to anxiety. Heroic virtue helps an ordinary person to accomplish ordinary things in an extra ordinary way. To get successful future, "knowledge" should increase. Educational level is not one and only parameter for measure the knowledge. "Too much studies, but not practical out comes" is the problem. People can increase knowledge by increasing mind and freewill. Mind and freewill are special gifts for human. So they should able to increase those abilities. It is their responsibility for successful future.

So human should go away from prejudice thoughts (Judging others) and destructive thoughts (no pardoning quality).Human lives run by attitudes.

If anyone able to increase their attitudes in a good way, that will be the turning point of their lives. That is the start of a successful life.

Skills called as road of human for their success. Skills are varying from person to person. First of all it is need to identify them. Then need to develop them. Don't be an ineffective person. Also it is not enough be an effective person. It should need to be a proactive person to lead a successful life.

Mind Concentration is the exercise for successful future.

* Develop a Habit. (Every day analyzing on one subject)
* Allocate a Time(Statistical Equilibrium)
* Everyday Practice
* Do one thing at a time
* Without Anxiety.

9. **In a society we all are interdependent you cannot live along. What are three factors you should consider to improve the inter dependency. Explain briefly? How do you implement, those factors, among your friends in you campus?**

* Faith
* Charity
* Hope

Faith is depending on interdependency and region. Each and every religion deeply discuss about this concept.

Faith is the confident belief or trust in the truth or trustworthiness of a person, idea, or thing.

For develop inter dependency this is major fact. Charity is a concept that needs to practice in real life. If anyone need help should not go away from that person. People should give help to others who needs that help.

Hope is the food for life. If anybody has not any hope that person does not aim in live. In university life we are spend our life so far from our parents. We need to keep a better inter dependency with other student. Student need to improve those facts such as faith, charity and hope. Those thing should come from their inside.

I practice to improve those factors inside myself. First of I try to do mind practices. I always try going away from Prejudice Thoughts and Destructive Thoughts in my best. Then I can be a faithful person. I like to help other who needs my service. I shared my knowledge with others (related to education) and give help to them as I can. So other friends also give me help when I need. If anyone ill, I give my best support to that person. Actually, in university we met different kind of friends who are coming from different areas .There ideas may different. But all are students & all are friends. All have same aim, all are feel same feelings. Without others help no one can live alone. I have so many hopes in my life. Without hope we cannot live with each others. I am not going to say that I am fully improved these facts. But I can improve them in my practices.

10. **What are the mixed communications that you experience today? Explain the concepts of new communication methods, currently you experience in SRILANKA?**

Current trend is both personal and public communication occur simultaneously. This system is so popular one.

As an example

- FaceBook

  This is interactive relationship building environment. Now so many People have face book account. People can interact with others through world using this. By using "Friend finder" facility people find their school mates, batch mates after 10 or 20 years. Most important thing is that anyone can create a account without charge.

- Wikipedia

  This is a Knowledge gathering environment. People can gather knowledge and also share knowledge with the other world's people.

- Sirasa Super Star

  Most special thing is that people can interact with this system by voting (Use SMS) .Competition is available within a little amount of people. But huge amount of people interact with it due to SMS system. There watch the competition and select competitors as they feel. Then vote for them by SMS. Cost for one SMS is 10.00 rupees. Both competition created company and Telephone Company get that profit. People get them happiness.