

**INFORMATION AND COMMUNICATION TECHNOLOGY:
THE EMUMBWA OF THE KNOWLEDGE SOCIETY
(OR, THE REBIRTH OF IGNORANCE)**

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1. Information and Communication Technology – It is as old as the Human race

Communication – a very basic need, the cement that binds communities together and, yes, sometimes tears them asunder!

Communication is through behavioural patterns that are intrinsic to all human activity. It is about seeking, gaining and sharing knowledge for personal or community benefit, or to competitive advantage, whether in social interactions, in business, in play, or in war.

Communication is through patterns that impinge on the different senses: sight, smell, hearing, touch, and extra-sensory. These can be generated by the animal or plant organism directly or, especially for the higher levels of mammal, by artificial means.

As the human race grew, the quantity of race experience that enabled communities to survive or to have a competitive advantage over other communities grew. As organisms, simple and complex, started understanding this, demands on the brain grew, and the brain responded to be able to process and store the accumulating information. Human repositories of knowledge were created, passing on the knowledge in oral tradition to new generations, and making the knowledge entertaining, and thus easier to remember, by weaving it into stories. Would that the modern human lecturers could remember this art!

Even with evolution, the brain could only remember so much: some means of storage was required. Symbols were invented to capture this increasingly vast store of knowledge in a form that could be deciphered, or read, at will. Symbols, and the written word, were borne. Symbols and vocabularies became more complex as the demands on them grew. The Incas, the Egyptians – different directions in the development of symbols for keeping records.

The word is a thing of magic. The word carries meaning. How could such complex repositories of knowledge be reduced to mere symbols, and still be readable, so that even fools could have access to information, even if they could not process it to knowledge? We take the spoken and the written word for granted. No blaspheme intended, but is it not interesting that in one of the major religions, a deep passage that speculates on the origins of God says: In the beginning, there was the Word, and the Word was with God, and the Word was God?

Man has always dreamed of several things in communication:

One is communicating over long distances: The lion does the same, only it got stuck in a rut somewhere, using variations of sound, the roar being the most frightening. Elephants drum the ground with their feet to communicate. Many animals (even people!) use chemical

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excretions. Man moved from shouting to drums (sound) to smoke signals and semaphores (visual).

Second is keeping communication private so that it stays only in one's social group: you do not want to lose the competitive edge you have by giving the information you have to all. Of course one can whisper, but this does not help much if you want to communicate over a distance. This calls for codes. Animal sounds are different for different animals. Languages are different. The written word and symbols can be twisted around to be meaningless to those not in the know, even if they speak the language. Ludicha is a popular anti-child code. Traditional proverbs are a complex code that hides the real meaning below the face value meaning.

Third is getting the message across safely but at low cost, even if it must go through hostile territory (which might even require a battalion to guard the message, or a pigeon to fly over enemy territory – provided they do not shoot it down).

Fourth is making sure the receiver understands what the sender said. All languages have built in queries aimed at ensuring this. “*Otegedde?*”; “*Okobyeki?*”; “*Ati?*”. You will recall the famous world war two radio message that was sent as “*Please send reinforcements, we are going to advance*” and transcribed as “*Please send three and four pence, we are going to a dance*”.

We want to share knowledge, we want to share feelings, we want to maintain competitive advantage. We want to communicate: correctly, efficiently, cost-effectively – sometimes publicly, sometimes privately.

Information, processed to application and competitive or productive benefit, is knowledge. Information technology is as old as the human race: it is simply the way we acquire, process, store, retrieve, and transmit information. We see something (data); store it in our brain in reproducible and meaningful form (information); tie a knot in a handkerchief as a prompt to remind us; and, when so prompted, tell someone what we saw. This is the technology of the time. It is information technology, with all its advantages and disadvantages.

Communication is the method through which information from one location is transferred to another location. One can shout. The shouting is the communication technology (Fill your lungs with air, open your mouth wide, and blow it past your vocal chords very fast). You can put some useful information on to this sound (unless you think you are a lion) by sending signals from your brain to move the tongue around, forming different sounds, and adjusting the vocal chords to change sound pitch. There is now some information flowing through your communication channel.

Convergence is nothing new: communication technology is pretty useless without information technology; and information technology is pretty useless without communication technology. They must work together all the time. They start behaving alike until one cannot talk about one without the other. I sometimes wonder why there is so much hype about convergence: it occurred when species started communicating, but modern technology started creating distinctions until the futility and stupidity of *that* was realised.

2. So Why all the Hype?

The hype that has been around for the last twenty or so years is not about *what* is being done, but *how* it is being done.

The ability to send signals via radio waves, without a tangible link between and source and destination, overcame the challenge of distance.

The advent of the electronic computing machine (mechanical computing machines had been around long before) during world war two made it possible to process information that had to be communicated back into simple data, amenable to easy processing and transmission. This accelerated when the transistor was born in the early fifties, replacing the bulky, expensive, inefficient, and unreliable vacuum tubes. My age is the age of the transistor.

Some of you will remember the lyrics “on the tiny blue transistor radio”. The transistor indeed reduced the size and price of electronic devices, bringing them to the reach of the majority. The entertainment industry moved from theatres to peoples’ homes.

The launch of the Sputnik by the Soviet Union in the late fifties launched the space age, and global reach was created via satellite to any part of the world.

The refinement of sand into good quality fibres on which data could be carried in incredibly large volumes of ones and zeroes brought the cost of communication down, creating global reach at low cost. Together with the cable and optical networks spanning oceans and continents (except Africa), the global communication platform was ready for the adventurous. Distance died.

Apple broke the IBM computer paradigm: people must go and pay homage to humongous computers, sitting like gods in security compounds and air conditioned rooms, with minions of engineers, programmers, systems analysts, and technicians looking after their well being. Apple said the computer must go to the people. They made it smaller, cheaper, portable, starting a new race. Now each device is literally a computer, or is it? Is it a phone when it can be used to browse the internet, listen to music, watch movies, take pictures, talk to people, and do word processing?

Pretty useless until, from the IT side, the content stores, the crawlers or spiders running through all these and indexing data, the search engines, could bring the accumulated information and knowledge of the human race to the reach of anyone who is able to tap into it.

Pretty impossible if the world wide web was not invented at CERN, Geneva, enabling open access to this global network, and global resources. The Internet age started.

And on the applications side? Global communications gave companies global presence and reach. The world wide web gave people and companies access to the accumulated information and knowledge of the human race, itself growing exponentially all the time. The primordial drive for a competitive edge for oneself and one’s community, the dream of global domination, was back – with a vengeance!

3. But some people cannot tap into it!

Yes, like historical times, the survival of the individual, the community, is paramount. The world is ruled by celebrities, not by heroes, the do-gooders.

We hear there is a digital divide. Mbu! What is this ICT and digital divide beast? Well think about the Internet, with capital I.

Do you even know what it is and what it can do, or what you can do with it, use it for?

Do you have an access point you can use to tap into it?

Can you afford the device to tap in?

Do you know how to use the device anyway?

Can you afford the cost of tapping in?

Can you even read? OK, maybe in Lunyakitara or Luganda, but what about English?

You woman from Busembatia, you think you are going to find the information about where to sell your basket of potatoes on the web? Why do you waste your money?

OK, there is some information, but it is copyright. You must pay to use it. After all we give you a lot of aid.

And if your husband sees you going into that public place, he will divorce you as a Malaya.

My colleagues, the digital divide is very real!

4. ICT – the modern mumbwa or mukalakasa

And yet we preach ICT all the time. Emumbwa! Mukalakasa! Omwami atakyasobola kusamba kagaali! Sente nga zikubuze! Muliranwa wo nga akuwalana! Embuto ezidingana! Okukolola! Okusesema! Mukenenya! Bigalanga! Okubeera omuganzi!

We tell people ICT will improve their business! It will make them more efficient! It will make their companies competitive! It will spur development! There is a correlation between the number of hosts and economic development! (Which came first – the chicken or the egg? Economic development or the hosts?). It will improve governance! It will improve health! It will improve education! It will improve agriculture!

Wapi! In the middle of knowledge, ignorance has been reborn!

Take all the books you have read and place them in the home of an illiterate person. Come back after a year. With a bit of luck, they would have sold them for an income. On the other hand, they could be convenient for lighting fires and other uses we shall not discuss here.

The environment for full digital inclusion is defined by a set of straight As. A reduction in any of the As leads to increasing digital exclusion. These define the key fronts where the digital divide occurs, making it also a multi-faceted challenge. The key fronts:

- i) *Awareness* – of the potential and benefits of ICT. Such awareness must be to a level that will make people invest their own resources, even if limited, in the assurance of greater social and economic returns, creating an environment for sustainability;
- ii) *Ability* (or Capacity) across the board, covering required competencies and skills around ICT: visioning; policy formulation; laws and regulation; knowledge management; network design and implementation; information resource management; programming skills; commercial exploitation; computer literacy and user skills;
- iii) *Access* – to the communication channels. This ranges from the highways to the major roads to the feeder roads to the last access point (phone; PC; converged device, etc);
- iv) *Application* – in ways that lead to increased efficiency and cost-effectiveness, economic gain, transparency, etc. This captures the ability to integrate, translating data to information to knowledge that can be exploited by organisations for increased competitiveness, and communities for a higher level of human development.
- v) *Affluence*, which determines *affordability*. It is one of the contradictions of life that those who are more affluent can get everything cheaper. In the ICT area, this is magnified several times over. Makerere University, for example, has one of the lowest costs of bandwidth among African universities South of the Sahara – now going down to \$1,500 per Mbps per month (plus 17% VAT). In Europe, institutions that are much richer get this bandwidth often at much less than \$50 per month.

A cross cutting dimension in all this is the gender dimension.

The divide is not just between region and region, country and country. It is also between Kampala and Busembatia, Kololo and Ntinda, Ntinda and Kalerwe, rich and poor, male and female, young and old.

5. Is it then a waste of time?

The issue is the approach. ICT can never be the solution: it must be part of broader, holistic solution.

ICT cannot lead to good governance. In fact it can lead to repression, the Big Brother syndrome. It is however part of the solution where there is human will and determination as well as the supporting policy and legal environment to have good governance.

ICT can have a role in a well conceived strategy as one of the tools to address some of the challenges in societal transformation: the provision of good health; the provision of better education; the provision of access to relevant agricultural information, etc.

Transformation should not be driven by technology, but by organisational change. This is ict4D.

ICT cannot transform an organisation: the organisation must want to change, to improve itself. Then ICT can be a useful tool. Many organisations have been driven by the simple

desire to computerise without reviewing their inefficient methods of work. Computerisation then makes organisational failure more efficient, which is maybe a mercy: organisational euthanasia.

When an organisation truly wants to change as a means of survival, of maintaining competitive advantage, the tools required to support the process are never too expensive: look at how much even the poorest country can mobilise when its borders are threatened (externally and internally!).

6. And the Uganda scene?

Uganda stills lacks the will to transform. We talk about it. We spend money on it. But we do not push it to the limit. There are too many inefficiencies in the process.

If we look at just ICT as a tool in the process:

What has happened to the National ICT policy? Like the economic war business people who thought owning a shop would make them rich, we think having a policy will help us to transform.

The duopoly ended mid-2005. Where is the new telecommunications policy to guide sector growth? Yes, it is on the web where, we think, it safely belongs. After all we were told to use the internet. We do have a shop.

There has been much talk about the National Information Technology Agency – Uganda. It has been a bill for some time. What does it matter? We have a bill.

Maybe there will be some change: we have heard that the different components of ICT that have been waging a genocidal war for the last few years will be brought under the same political umbrella. I wonder whether we should hold our breath.

We need to put our act together if we are to really transform this country of ours.

Now, this lecture was billed as a forum where the professionals would unravel myth from reality when we talk about ICT: Now, that is the greatest myth of all!

Thank you, ladies and gentlemen.