



**ICT for SMEs Workshop - 13th Dec. 05,**

***ICT for SMEs - Hardware, Software  
(including Open Source), Human Ware  
and the Internet***

Presenter:  
E.N.Nfuka B.Sc(Havana), M.Sc(Barcelona),  
Deputy Managing Director  
University Computing Centre(UCC).

***“Improving Productivity & Competitiveness”***



# Agenda

1. SMEs & Development goals
2. What are SMEs
3. Information & Communication needs for SMEs
4. Application of Information and Communication Technologies to SMEs
5. Using Open Source Software(OSS) in SMEs
6. ICT areas and Cost Implication
7. Conclusion



## SMEs & Development goals

- SMEs all over in the world are known to play a major role in social economic development.
- In fact *“The only way to reduce poverty in a sustainable way is to promote economic growth, through wealth and employment creation. In developing countries, SMEs are the major source of income, a breeding ground for entrepreneurs and a provider of employment.” ~ United Nations Industrial Development Organization*
- This is apparently also the case of Tanzania, where SMEs contribute significantly to employment creation, income generation and stimulation of growth in both urban and rural areas as also indicated in MKUKUTA among others.
- In fact it is estimated that about a third of the GDP originates from the SME sector.

## SMEs & Development goals

- The Tanzania Development Vision foresees that by the year 2025, *“Tanzania should have created a strong, diversified, resilient and competitive economy, which can effectively cope with the challenges of development and, which can also easily and confidently adapt to the changing market & technological conditions in the regional and global economy”*.
- In recognition of the importance of SME sector and its contribution to the National Vision 2025, the government has continued to design and implement a number of policies and programmes supportive to the development of the sector.

## SMEs & Development goals

- One of these policies is *SME development Policy* of which its overall objective is to foster job creation and income generation through promoting the creation of new SMEs and improving the *performance & competitiveness* of the existing ones to increase their participation and contribution to the Tanzania economy.
- This calls for a dynamic process of SMEs development to stimulate the *competitiveness of Tanzanian goods & services in the domestic and regional markets* as the stepping-stone to more effective entry and participation in the global market.
- *Deploying ICT to improve* productive processes, *increasing competitiveness of product & services* & extending outreach & market access is therefore part of key strategies that respond proactively to the *emerging opportunities* & challenges

# ICT policy & ICT for Dev. Opportunities

**ICT Policy** was developed in context of supporting Vision 2025 that has five areas; high quality livelihood; peace, stability & unity; good governance; a well educated & learning society; & a strong & competitive economy capable of producing sustainable growth & shared benefits.

## Ignorance/Education:

- Teacher's training
- Upgrading of teachers
- Quality of learning
- Awareness coverage
- Life-long learning
- Policy sensitisation
- Resource management

## e-Government:

- 24x7x365 accessibility
- Available information
- Efficiency of process
- Multi-way transactions
- Responsiveness
- Consistency of services

## Natural Resources / Env:

- Aerial surveys & mapping
- Geograph. Info. Systems
- Remote sensing facilities
- Satellite communications
- Resource databases
- Disaster mgt & rescue

## Isolation:

- Mobile technologies
- Community oriented
- Locally relevant info
- Shared/pooled facilities
- Wealth creation options
- Support via peering
- Opening the hinterlands

## Health/Nutrition:

- Training & reskilling
- Improved quality
- Increased coverage
- Expanded services
- Tele-medicine
- Monitoring outbreaks
- Resources mgt

## Financial Sector:

- Efficient transactions
- Transparent taxation
- e-banking 24x7x365
- Secure online trading
- Micro-credit online
- International payments

## SMEs:

- Access to wider markets
- Reduced production costs
- Improved competitiveness
- Supply-chain integration
- Access to knowledge
- e-Business opportunities

ICT in  
Development



## What are SMEs

- SMEs nomenclature is used to mean Micro, Small and Medium Enterprises.
- It is sometimes referred to as micro, small & medium enterprises (MSMEs).
- The SME cover non-farm economic activities mainly manufacturing, mining, commerce and services
- There is no universally accepted definition of SME but commonly used yardsticks are total number of employees, total investment and sales turnover, as it is illustrated in the diagram in the next slide.



# What are SMEs

Category	Employees	Capital Investment in Machinery(Tshs)
Micro enterprise	1-4	Up to 5 mil.
Small enterprise	5-49	Above 5 mil. – 200 mil.
Medium enterprise	50-99	Above 200mil. – 800 mil.
Large enterprise	100+	Above 800 mil.

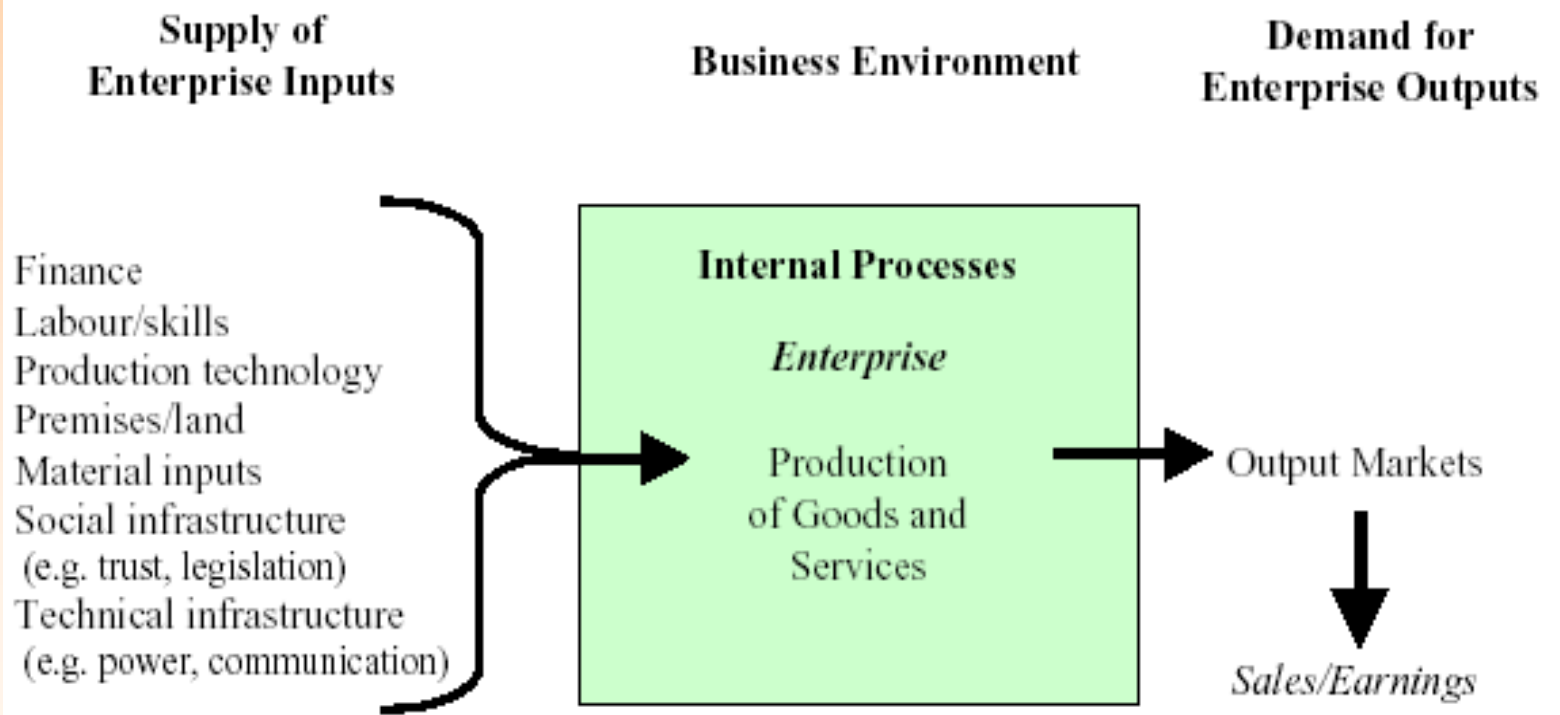
Source: [www.tanzania.go.tz/policiesf.html](http://www.tanzania.go.tz/policiesf.html)



# Information & Communication needs for SMEs

- **Supply:** of inputs (e.g. information on where to get materials/support for their business).
- **Demand:** for outputs (e.g. information on new & existing customers for their goods/services).
- **Environment:** around their business (e.g. information on relevant government regulations).

➤ **Internal Processes:** within their business (e.g. information on which staff are performing best).



**IT - Information Technology**



**ICT - The Convergence of Information and Communications Technologies**

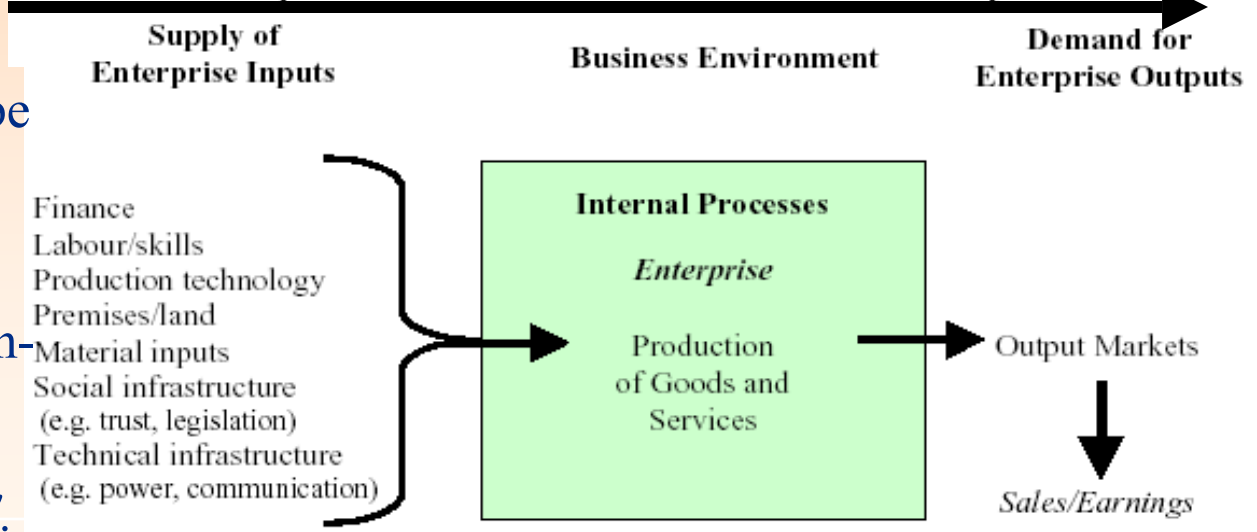
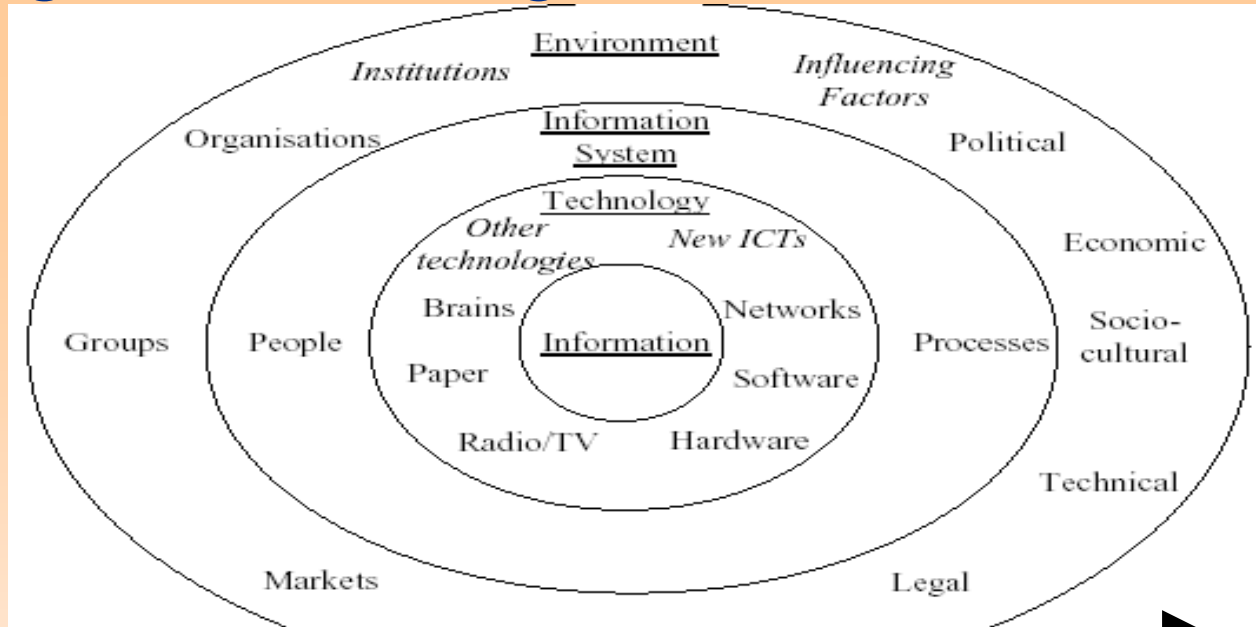


**Communication Technology**

**Capturing, Processing, Storing & Transmitting**

# Application of Information and Communication Technologies to SMEs - Integrated view

- Be information-centred
  - Value of ICTs comes from the abilities to handle information;
- Address the full range of technologies that handle information – not just digital
- ICTs include intermediate (radio, TV, telephone), literate (books, newspapers, manuals) and organic (human-based) technologies;
- ICT interventions must also be integrated: start with goals, then identify the information needs of those goals; then identify the role of information-handling technologies. e.g. *"Better Marketing"* and not start with *"Using the Internet"*.



## Fixed-line Telephone/Fax

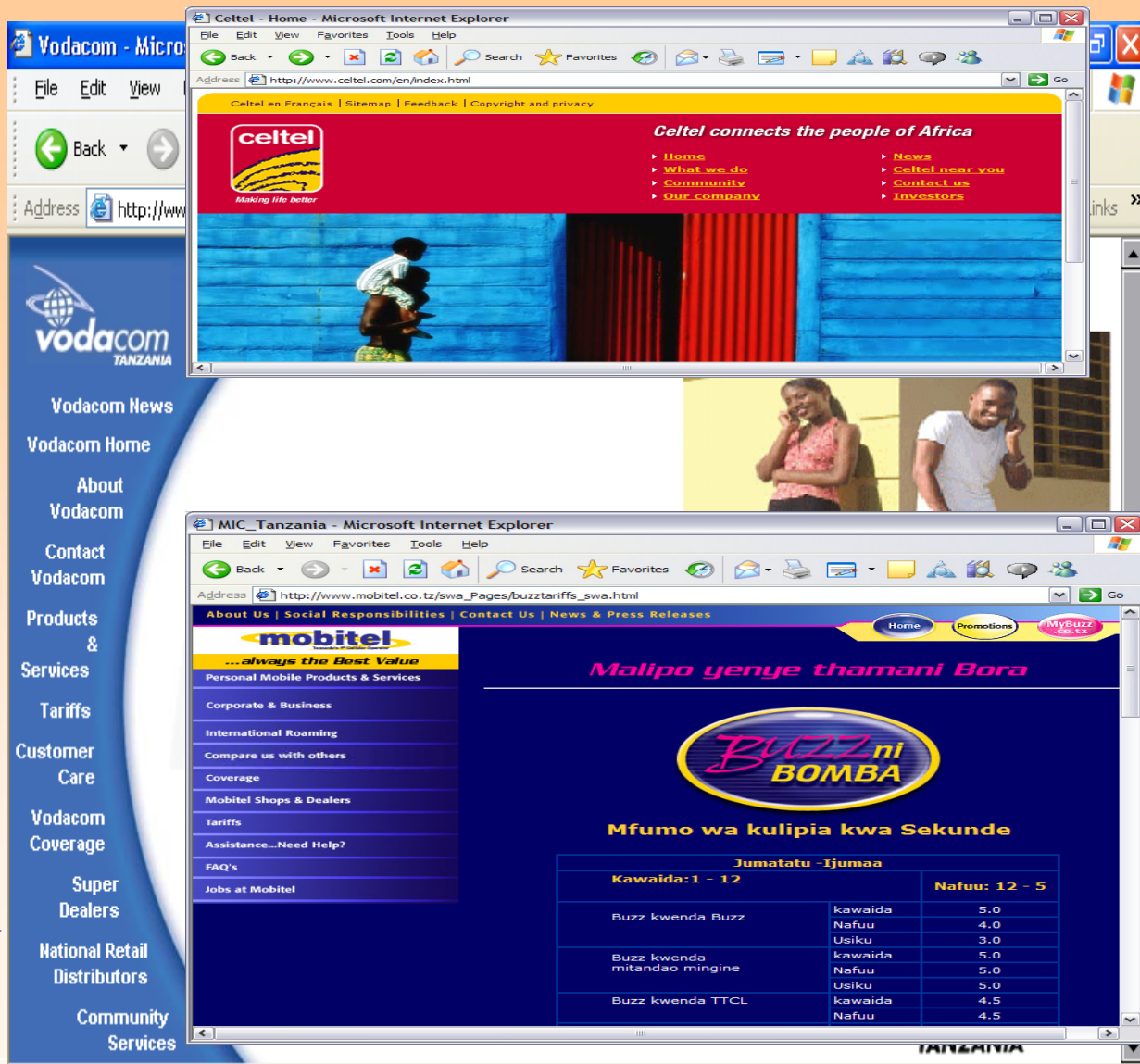
- Fixed-line telephone/fax is currently the most cost-effective communication technology for small enterprise.
- Used for Making initial contact with potential customers/suppliers and arranging meetings with business contacts.
- Used for Direct marketing of products and services and obtaining information from suppliers & customers, saving both time and journeys.
- Used for Keeping customers up-to-date and informed, e.g. about production or delivery problems and opportunities.

The screenshot shows the TTCL website in a Microsoft Internet Explorer browser window. The address bar displays 'http://www.ttcl.co.tz'. The main content area features a large advertisement for a 'FREE! TELEPHONE SET' with every new TTCL Prepaid line. The offer includes connection, deposit, and installation. The price is listed as 'Only 45,000/= inclusive of VAT'. A navigation menu at the bottom includes links for HOME, ABOUT TTCL, CUSTOMER SERVICE, PRODUCTS AND SERVICES, TARIFFS, and CURRENT INFORMATION. There are also sections for 'Got a Question?' and 'Find Your Local Office'.

# Application of Information & Communication Technologies to SMEs - What ICTs Can SMEs Use?

## Mobile Phone

- They are particularly suited to business users and let *entrepreneurs answer customer calls immediately, and reach staff or business contacts while working away from business premises*. This can make the difference between winning or losing an order.
- Although tariffs can be high, mobile phones provide *greater flexibility, faster customer response and time savings* compared to a fixed-line phone. They can also be obtained far more readily.



The image shows two screenshots of mobile service websites. The top screenshot is the Vodacom Tanzania website, featuring a navigation menu with links like 'Vodacom News', 'Vodacom Home', 'About Vodacom', 'Contact Vodacom', 'Products & Services', 'Tariffs', 'Customer Care', 'Vodacom Coverage', 'Super Dealers', 'National Retail Distributors', and 'Community Services'. The bottom screenshot is the Mobitel Tanzania website, displaying a 'buzztariffs' page with a table of rates for 'Jumata - Ijumaa'.

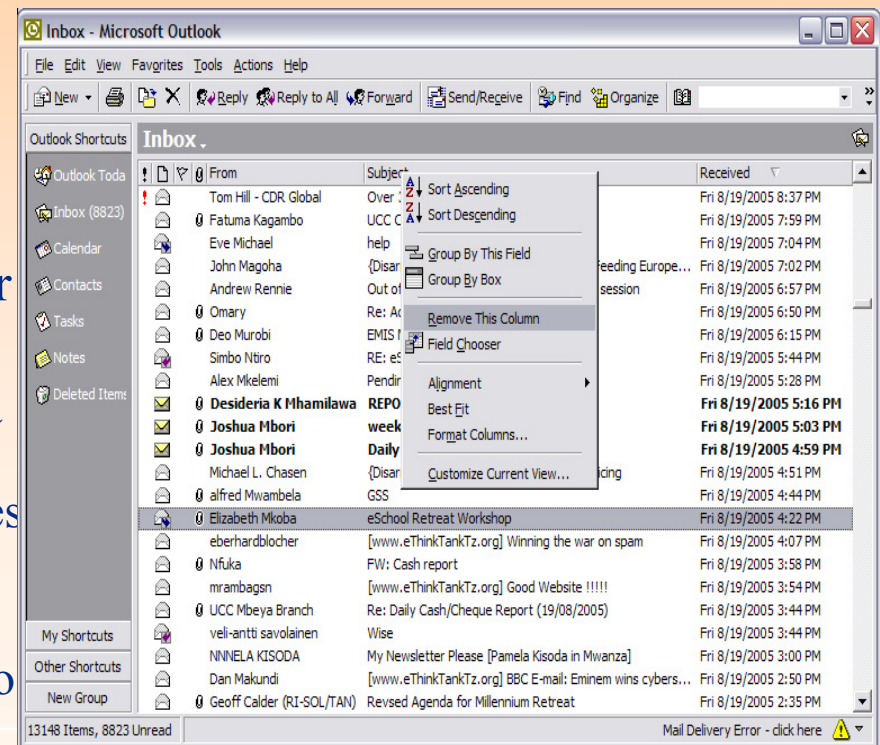
Jumata - Ijumaa		
Kawaida: 1 - 12		Nafuu: 12 - 5
Buzz kwenda Buzz	kawaida	5.0
	Nafuu	4.0
	Usiku	3.0
Buzz kwenda mitandao mingine	kawaida	5.0
	Nafuu	5.0
	Usiku	5.0
Buzz kwenda TTCL	kawaida	4.5
	Nafuu	4.5

## Application of Information & Communication Technologies to SMEs - What ICTs Can SMEs Use?

### ▪ Electronic Mail (Email)-Communication Services

Email is the exchange of messages between computers. It offers SMEs a number of benefits, particularly compared with post, fax or phone:

- Provides the cheapest, quickest and most reliable way to exchange business information with those customers, suppliers, etc.
- Allows a variety of information to be sent – not just messages but documents, photographs, drawings, etc.
- Messages can easily be protected, recorded and organized. Also messages can easily be sent to multiple recipients.
- Services can be accessed by the entrepreneur while away from the office.
- In order to use email, enterprises need access to a network/Internet-linked computer. email services can increasingly be accessed from shared facilities e.g.. Internet Cafe.
- Potential sources and recipients must also have access to email, so email is of particular benefit to enterprises that import, export, sells etc.



## Application of Information & Communication Technologies to SMEs - What ICTs Can SMEs Use?

### ■ The Internet and World Wide Web (WWW)

- The Internet is a global network of computers which can communicate with each other.
- Internet use by SMEs is growing very fast but is still limited.
- A Web site contains pages of data (words, pictures, sounds, video) that are linked together electronically.
- A Web site can be accessed by anybody who has access to the Internet & links SMEs to a potential world-wide market; e-business.



# Application of Information & Communication Technologies to SMEs - What ICTs Can SMEs Use?

## ■ The Internet and World Wide Web (WWW)...

- Web is used for Information dissemination, capturing, transaction and sales support
- SMEs can promote business, process enquiries and orders, and to accept payments using debit/credit cards. Also can get & process relevant information from other SMEs/organizations websites.

www.sido.go.tz - Mozilla Firefox

File Edit View Go Bookmarks Tools Help

http://www.sido.go.tz/

Customize Links Free Hotmail RealPlayer TOSHIBA Access Windows Marketplace Windows Media Windows

### SMALL INDUSTRIES DEVELOPMENT ORGANISATION (SIDO)

Technology  
-Development  
-Search  
-Transfer

- Home
- About SIDO
- Services to SMEs
- SME Products Catalogue
- Business Information
- Business Opportunities
- SIDO programmes
- Events
- Government policy on SMEs

**Vision**

A leading business support organization in Tanzania providing, efficiently and effectively in a business-like manner, quality services that unlock the potential for growth and competitiveness of SMEs in rural as well as in the urban areas.

**Mission**

To create and sustain an indigenous entrepreneurial base through the promotion and support to the development of SMEs by providing them with business development services and specific financial services on demand. Priority is given to productive economic sectors that contribute to wealth creation.

**Newsletter**

< Please Select > GO

**President of the United Republic of Tanzania, Hon. Benjamin Mkapa, admires the SIDO SME catalogue during the Central Zone exhibition held in Singida on 14<sup>th</sup> October 2005. More....**

**ENJOY SME PRODUCTS**

**SIDO REGIONAL OFFICES**

Let your business known through the BIS dynamic pages [Compare Prices Online](#)

Mar. 22, 2003 | Admin | Guestbook | Comments

**Prices(Nutshell)**

Week Ending 18 March, 03	Price
MBEYA Markets	
Maize(108 Kg)	14200
RiceMby(120Kg)	40500
IrishPotatoto(84Kg)	6600
Garlic(84Kg)	84000
SoyaBeans(108Kg)	34500
DSM Markets	
Maize(100Kg)	10500
Onion(120Kg)	60000
IrishPotatoes(100Kg)	19000

Place ORDERS

Traditional Cultural Textiles

**Tomato and Onions businessman waiting for the customers at Mkumi Market, Iringa(Photo: BIS).**



# Application of Information & Communication Technologies to SMEs - What ICTs Can SMEs Use?

## Other Office automation applications

The market indicates that ICTs can reduce time and money costs of business processes, and can improve the certainty and quality of those processes.

## General office application

- Information Production e.g. use of *Word processing* for creating documents, *spreadsheet* for calculations, *Presentation* for creating and presenting issues and *desktop publishing* for creating promotional materials.

### Welcome to Jamani's Internet Cafe!

Services	Specification	Price	Products	Price
Internet access	Surfing and e-mailing, per hour	2,000	Floppy diskette	1,000

Secretarial Services
Typing and designing
Copying (black & wh)
Printing (black & wh)
Printing (colour)
Binding

Computer training
Training E-mail & int
Training Microsoft W
Training Microsoft E

## A simple business plan

### BAGAMOYO BATIKS

#### Revenues

Particulate
Tableware
Batik training
<b>Total revenues p</b>

#### Material cost

Fabric
Print
Wax
Extra
<b>Material cost per</b>
<b>Total material co</b>

#### Extra costs

Rent
Electricity
Transport
Other
<b>Total extra costs</b>

#### Turnover

Materials
Extra cost
<b>Total income</b>

#### EDWARD TINGATINGA

Tingatinga painting originated with Edward Tingatinga, a self-taught Tanzanian artist. In the 1960's he started painting colourful animals. After his unfortunate death in '72, Edward's students kept his unique style alive.



#### TINGATINGA 2003

As the tourist industry grew, the Tingatinga art scene developed in an industry itself. With the focus on production of copies rather than on the development of the style as it has received little attention.



Bill Mang'ati at work in Bagamoyo

#### BILL MANG'ATI

An exception to the general trend is Bill Mang'ati. With a keen eye for detail and critical sense of form his paintings bring new life to Tingatinga. Experiments with themes and media result in true Tingatinga masterpieces.

### WELCOME TO Tingatinga Center

#### BAGAMOYO



Visit our exposition of Tingatinga paintings by Bill Mang'ati

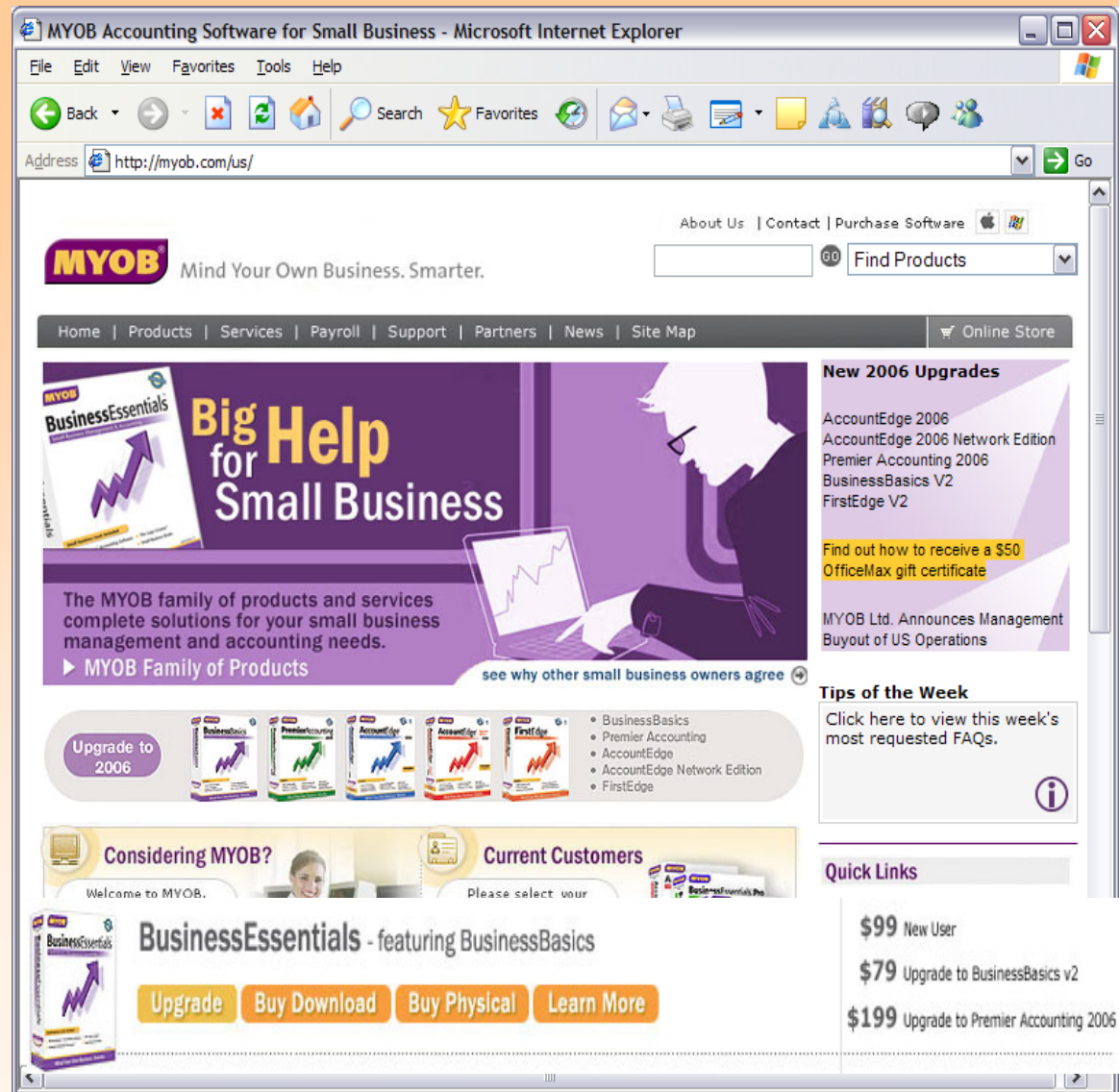
Follow a course and learn from an original Tingatinga painter

# Application of Information & Communication Technologies to SMEs - What ICTs Can SMEs Use?

## Other Office automation applications

## Specialized office application

- Accounts Packages e.g. MYOB-provides sound financial management for a small business with simple accounting needs that includes sales, banking, expenses, and customer management.
- HR Packages
- Business Plans generation for SMEs etc.



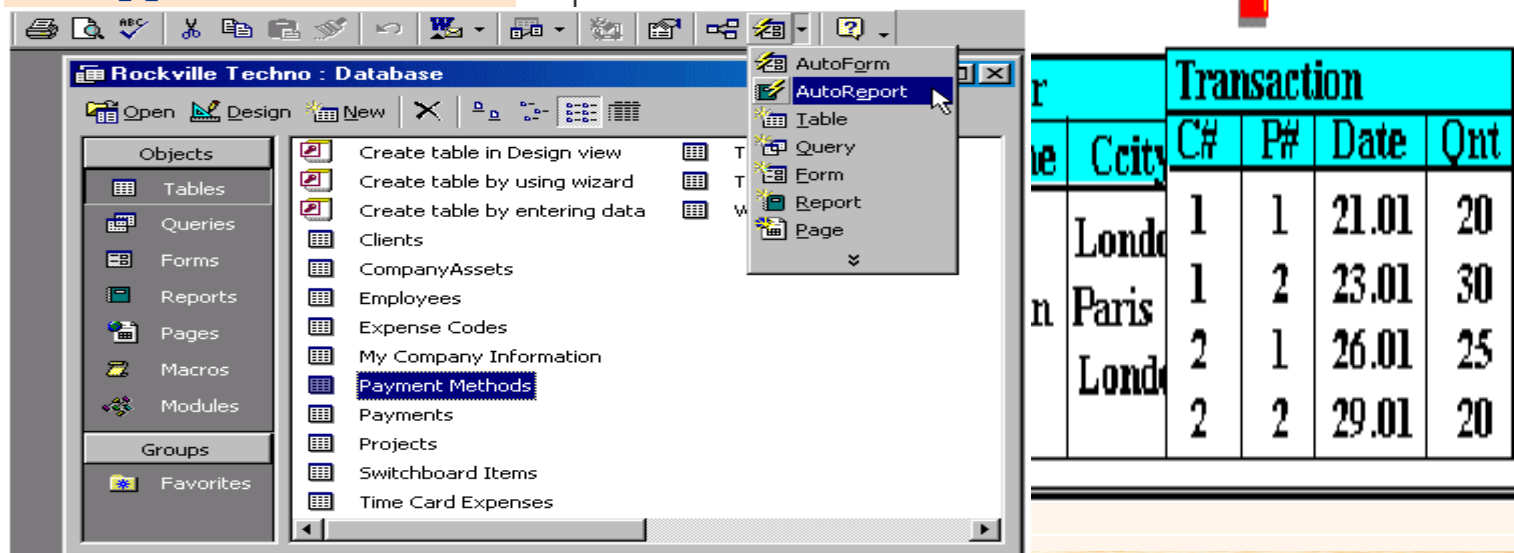
# Application of Information & Communication Technologies to SMEs - What ICTs Can SMEs Use?

- Other Office automation applications...
- Information Systems / Databases
  - Information storing and retrieval applications

My-Transaction-1			
Cname	Ccity	Date	Total-Sum
Codd	London	...	20 000
Codd	London	...	36 000
Martin	Paris	...	25 000
Martin	Paris	...	24 000

External View

Define View My-Transaction-1 As  
 Select Cname, Ccity, Date,  
**Total-Sum=Price\*Qnt**  
 From Cutomer, Transaction, Product  
 Where Custmer.C#=Transaction.C#  
 & Transaction.P#=Product.P#



The screenshot shows the Microsoft Access interface. On the left, the 'Objects' pane lists various database objects. The main window displays a table named 'Transaction' with the following data:

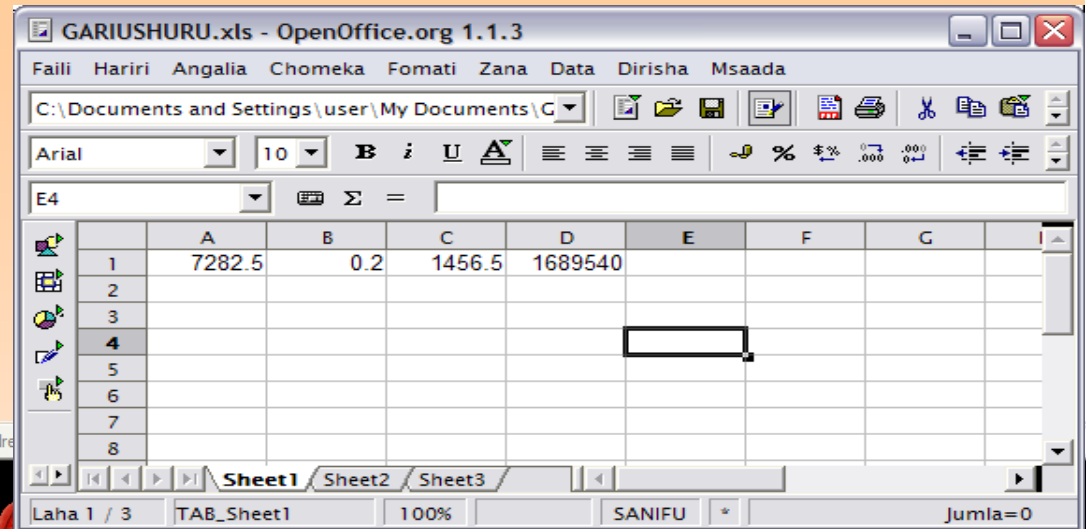
Cname	Ccity	C#	P#	Date	Qnt
Codd	London	1	1	21.01	20
Codd	London	1	2	23.01	30
Martin	Paris	2	1	26.01	25
Martin	London	2	2	29.01	20

A context menu is open over the table, showing options: AutoForm, AutoReport, Table, Query, Form, Report, and Page. The 'AutoReport' option is highlighted.

# Using Open Source Software in SMEs

Open Source Software (*freedom to use, modify and redistribute software*) has fascinating potential to solve some of the obstacles being encountered in SMEs

1. Open source software could increase the affordability of using ICT in SMEs by eliminating licence costs, reducing piracy & implementation/support charges.
2. Open Source Software for SMEs implementations reference
3. Building local Industry & localized use of ICT



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- news
- international
- help wanted
- requirements
- installation

Paymaster is an open source free payroll and HR application designed for small to large organisations. It works in batch process system for paying employees, using journal entries and a series of ledgers for storing the accounts. A customisable backed calculates the results to help meet the diverse requirements of payroll. Complex tax laws, leave, varying pay rates, allowances, superannuation are some of the things the payroll system can handle. Paymaster is written for gnome and uses postgresql for its database backend.

## Using Open Source Software in SMEs

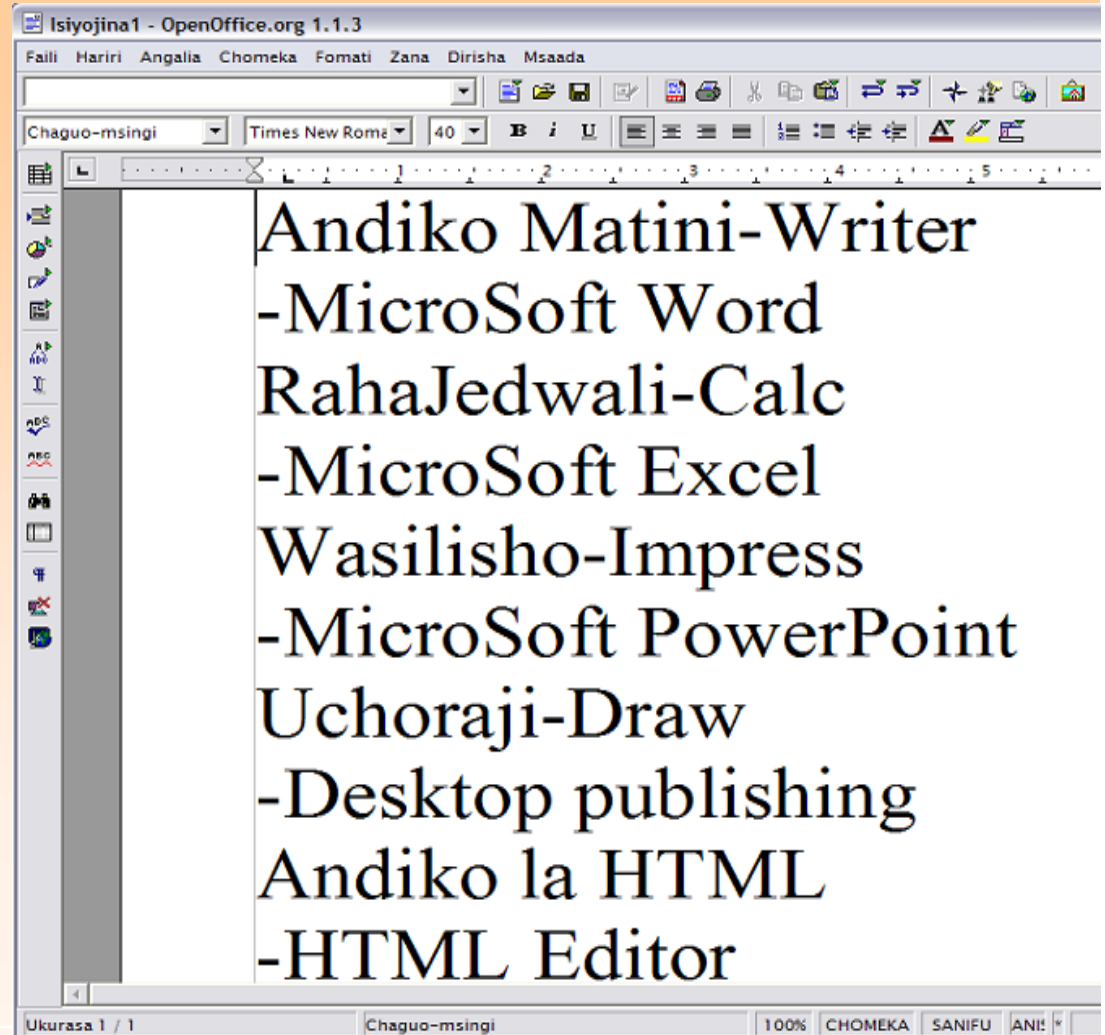
- One of the aspects that makes an OSS project better is the developers and the commitments around the world.
- The critical mass of distributed developers insure that the best projects will be maintained
- OSS makes it easier to develop in-house support/OSS forum or to choose from competing OSS support firms like UCC, Unisystems etc.

- The establishment of an association to promote the use of the OSS in Tanzania, TAFOSSA is being finalized.



## Using Open Source Software in SMEs

- Given the demand for security, portability, localizability & affordability the philosophy of OSS is unified and fits into SMEs business.
- OSS used to be famous for backend(technical people) but now even end users are comfortable as there are windows environment (various Window based Linux Distributions) and improved desktop applications (**Open office, Mozilla web browser, Paymaster** etc)
- Some have been localized in Swahili e.g. Kilinux ([www.kilinux.udsm.ac.tz](http://www.kilinux.udsm.ac.tz)) i.e. Jambo office and Mozilla([www.costech.or.tz/kkk](http://www.costech.or.tz/kkk)) i.e tuwasiliane Projects.



# ICT areas & cost Implication

- Hardware
- Software
- Networks
- Internet
- Website
- Awareness
- Training
- Consultancy



# ICT areas & cost Implication

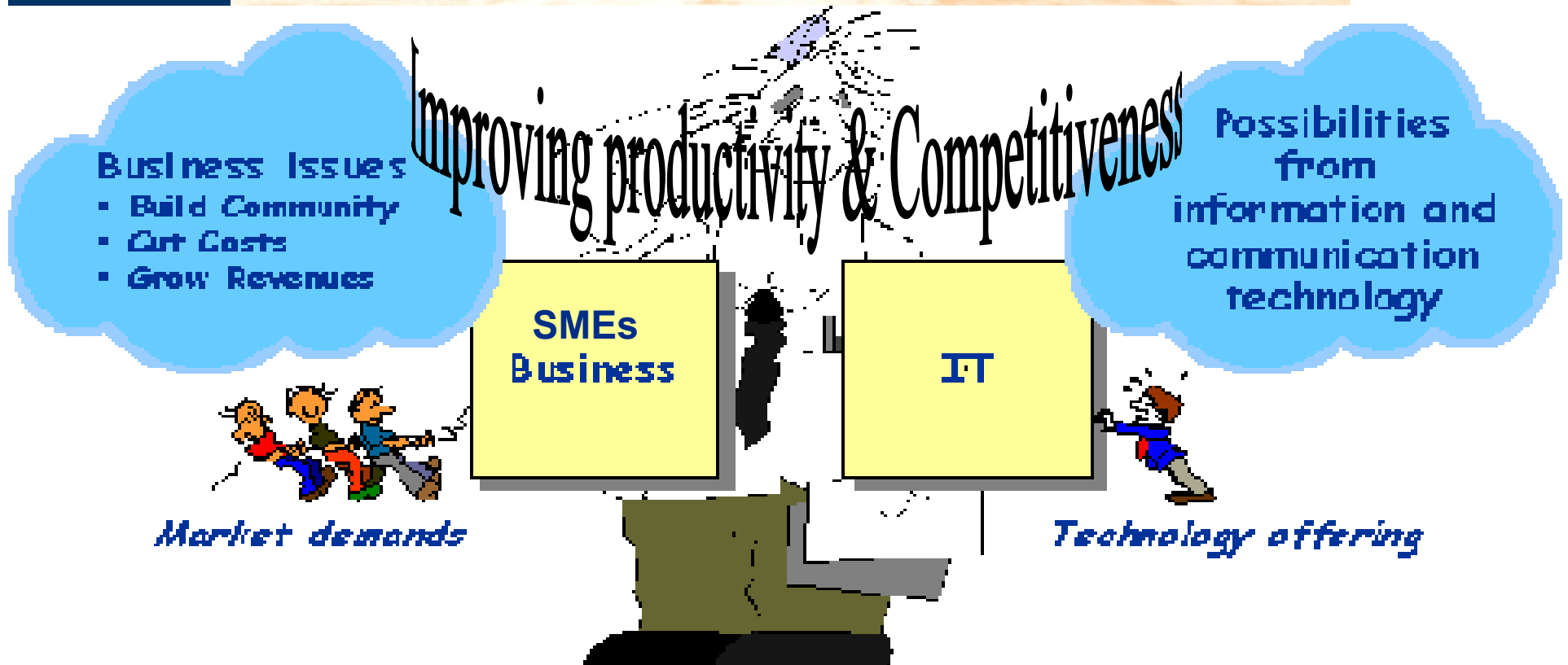
- Hardware(Computers, Printers, Scanner, Phones etc)
  - Purchase (Brand, non-Brand and refurbished PCs)
  - Operating costs (printer ink/toner, disks/USB, electricity etc).
  - Maintenance
    - Preventive maintenance
    - Corrective maintenance
    - Spare Parts for replacements
- Software(Office applications, Specific (HR,Acc. package etc)
  - Purchase
  - Licenses(Proprietary vs. Open Source)
  - Implementation(data entry etc)
  - Maintenance/Management(Support)
- Networks
  - Deployment (Installation & Configuration)
  - Technical Support



# ICT areas & cost Implication

- Internet(Leased line, Wireless, RipWave, CDMA, Dialup)
  - Initial setup cost (Equipment & Installation)
  - Monthly Charges
- Website
  - Content Preparation(identification & digitization)
  - Web design and hosting
  - Web Maintenance(Content updating etc)
- Awareness(Decision Makers, Entrepreneurs etc )
  - Availability & appropriate use of ICTs
  - Linkage of ICT and business/entrepreneur goals
- Training
  - End User(Office application,Internet/Email, Desktop Publishing, Accounting Package, HR etc
  - Technical (IT Essentials, CISCO, MCSE, Linux Admin.)
- Consultancy(Cut across e.g.study appropriate & effective use of ICT in the enterprise)

# Concluding thoughts



**“It is not the strongest species that survive, nor the most intelligent, but the ones most responsive to change”**

**Charles Darwin**

***The origin of the species***



## *ICT for SMEs Workshop - DSM,*



# Thank you for listening



Presenter:  
 E.N.Nfuka B.Sc(Havana), M.Sc(Barcelona),  
 Deputy Managing Director  
 University Computing Centre(UCC).

*“Improving Productivity & Competitiveness”*

