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| **Oxford International School** | **Information and Communication Technology IN BUSINESS** |

A good way to think about ICT is to consider all the uses of digital technology that already exist to help individuals, businesses and organisations use information. This means **ICT covers any product that will store, retrieve, manipulate, transmit or receive information electronically in a digital form.** For example, personal computers, digital television, email, robots, etc. Therefore, ICT is concerned with the **storage**, **retrieval**, **manipulation**, **transmission** or **receip**t of digital data. Importantly, it is also concerned with the way these different uses can work with each other.

On the other hand, in business, ICT is often categorised into two broad types of product:

* **The traditional computer-based technologies** (things you can typically do on a personal computer or using computers at home or at work); and
* The more recent and fast-growing range of **digital communication technologies** (which allow people and organisations to communicate and share information digitally).

**The Traditional Computer Based Technologies include:**

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| **Application** | **Use** |
| **Standard Office Applications - Main Examples** |
| ***Word processing*** | E.g. Microsoft Word: Write letters, reports etc |
| ***Spreadsheets*** | E.g. Microsoft Excel; Analyse financial information; calculations; create forecasting models etc |
| ***Database software*** | E.g. Oracle, Microsoft SQL Server, Access; Managing data in many forms, from basic lists (e.g. customer contacts through to complex material (e.g. catalogue) |
| ***Presentation software*** | E.g. Microsoft PowerPoint; make presentations, either directly using a computer screen or data projector. Publish in digital format via email or over the Internet |
| ***Desktop publishing*** | E.g. Adobe In design, Quark Express, Microsoft Publisher; produce newsletters, magazines and other complex documents. |
| ***Graphics software*** | E.g. Adobe Photoshop and Illustrator; Macromedia Freehand and Fireworks; create and edit images such as logos, drawings or pictures for use in DTP, web sites or other publications |
| **Specialist Applications - Examples (there are many!)** |
| ***Accounting package*** | E.g. Sage, Oracle; Manage an organisation's accounts including revenues/sales, purchases, bank accounts etc. A wide range of systems is available ranging from basic packages suitable for small businesses through to sophisticated ones aimed at multinational companies. |
| ***Computer Aided Design***  | Computer Aided Design (CAD) is the use of computers to assist the design process. Specialised CAD programs exist for many types of design: architectural, engineering, electronics, roadways |
| ***Customer Relations Management (CRM)***  | Software that allows businesses to better understand their customers by collecting and analysing data on them such as their product preferences, buying habits etc. Often linked to software applications that run call centres and loyalty cards for example |

The C part of ICT refers to the **communication** of data by electronic means, usually over some distance. This is often achieved via **networks** of sending and receiving equipment, wires and satellite links. Here, the types of network are broadly categorized in two types:

* **Internal networks(Intranet)**

Usually referred to as a **local area network (LAN)**, this involves linking a number of hardware items (input and output devices plus computer processing) together within an office or building.

The aim of a LAN is to be able to share **hardware** facilities such as printers or scanners, software applications and data. This type of network is invaluable in the office environment where colleagues need to have access to common data or programmes.

* **External networks(Extranet)**

Often you need to communicate with someone outside your internal network; in this case you will need to be part of a **Wide Area Network (WAN**). The Internet is the ultimate WAN - it is a vast network of networks.

Moreover, a sound grasp of information and communication technology (ICT) is fundamental to engagement in modern society. Information and communication technology teaches pupils how to find information appropriate to a task and to judge the accuracy and reliability of what they find. They learn to develop words and numbers, not just into reports, presentations and spreadsheets but also into information systems and computer models.

Furthermore, Pupils develop ICT capability by mastering technical skills, and understanding when to use them. ICT capability involves pupils finding, developing and communicating information safely and responsibly. Pupils learn how to use their skills purposefully to solve problems.

Adding up, Information and communication technology gets pupils questioning and learning things for themselves. It provides a gateway to information and experiences from a wide range of people, communities and cultures. It also gives them the skills and understanding to apply ICT effectively, in their learning, everyday life, and in the world of work ahead.

Nevertheless, the information we access through digital technologies can promote innovation, increase productivity, and enrich the quality of our lives. Content creation is not only a global business – now it can be anyone’s business. Using digital technologies to create and access our distinctive cultural content enhances our identity as New Zealanders. ICT helps us unlock our stores of national content, making them accessible to all, and it is a powerful tool for directing and expressing our creativity.

**Lifting productivity** is a key government goal. Investing in ICT can have a powerful effect on productivity in almost every industry, driving innovation, cutting costs, and opening up new opportunities. ICT can boost profits, help small firms overcome limitations of size, and enable even tiny enterprises to establish a global presence. But to take full advantage of the opportunities of ICT, we need to develop the skills of our workforce at every level, from front-line staff to senior management. Investing in management and business capability is a priority.

[DIGITAL](http://www.digitalstrategy.govt.nz/Digital-Strategy-2/) STRATEGY is contributing to productivity growth and is closely aligned with the government’s productivity enhancement programmes.

ICT also has environmental benefits, helping us achieve our goal of sustainable development. Through ICT we can manage resources better, such as improving the efficiency of energy use and supply, cutting production costs, and reducing our impact on the environment.

**Transformation through Information and Communication**

There is an international consensus on the importance of intellectual input in creating value, underlining the need for investment in education and skills in general, with a special focus on ICT skills and research and development. ICT has changed the face of modern science and technology research, requiring our research organisations to be linked to each other through an Advanced Network that is connected to the rest of the world. Ready access to a safe, secure, and affordable communications infrastructure that enables national and international collaboration is the other half of the equation to take us forward to the Knowledge Society:

**Information + Communication = Knowledge Society**

**HISTORICAL PERSPECTIVE**

Information and telecommunication have played an important role throughout the evolution of all species. It was known right from the start that information about our surroundings gives us a better chance of survival. What is edible? What is dangerous? What do the changes in the weather signify? Who is the enemy? Each individual in the community would gather bits and pieces of data and information about these and other aspects of their environment. Clearly, information not passed on is information lost. Communication within each species therefore gradually developed, getting more and more advanced as the complexity of the information to be passed on increased. Families developed into communities, and communities covered increasingly large areas. For communities covering large areas, it was no longer viable to communicate verbally, through say shouting, especially in emergencies (translating normally to danger). The need for long distance communication, or telecommunication, was appreciated very early in human community development (tele – at a distance). Smoke signals, drums, runners, and carrier pigeons, semaphores: all these played a crucial role at one stage in telecommunications, ensuring that vital information could be rapidly transmitted from one person or community to another. We are therefore not dealing with a new concept when we talk about information and telecommunications, even if in our modern conceit we often think so. We are just talking about new methods, ways and tools (technology) of doing what we have always done.

**INFORMATION TECHNOLOGY**

We are always collecting data, consciously and sometimes subconsciously. The ages, heights, and weights of people in a group; the speed of a vehicle; marks scored in assignments; the number of students in the university; the number and classification of books in the library: this data is consciously collected. Subconsciously, the body monitors, for example, the "temperature", and a decision is made to move away from a hot place. We therefore accumulate masses and masses of data. This poses several challenges: storage; access; analysis; presentation. Analysis is critical in that it reduces data to information, based on which decisions can be taken. A collection of one hundred sets of marks is just data. If this is analysed to get averages and other statistics, information about performance is obtained. Poor performance leads to a management decision: investigate, establish the cause of poor performance; and take corrective action. Over the ages, human beings have tried many ingenious ways of storing and processing information. Knots in ropes for storage; the spike abacus (still used) for data manipulation; and other less or more advanced techniques. It is not surprising that the most readily available counter, the digits on our fingers, led to the establishment of the count which goes to ten, and that still pervades all our systems. The count to ten and multiples thereof (decimal system) was convenient even when electrical methods of storing data came into fashion.

In electrical and electronic systems, it however became very unwieldy and expensive to represent the ten states implicit in the decimal system. On the other hand, it is very easy to represent a two-state, or binary, system using electrical or electronic devices. A switch has, for example got two states: on or off. The same applies to a light. Counting using binary digits therefore came into vogue (for the technologists), especially with the advent of electronic storage and processing devices. With parallel developments in microelectronics, it became possible to pack millions of devices in a square centimetre because we are only concerned with two states: off or on; 0 or 1. The device that has made this possible is the transistor. When it was invented just over forty years ago, it was a veritable dinosaur compared to its current size. Complex processes of computation, analysis, and indeed thought processes, are broken down into very simple steps through programming. Programmers translate our high level needs into simple routines that a computer can execute - very fast. Some of these are specific programs for specific research or a specific piece of work. Others are general application programs, like word processing and spread sheet packages. These sit between the user and the real computer, making life generally very easy. Since the computer lives in the binary world and we live in the more complex world of numerals, literal and trans-literal characters, data and information are always translated into our world before it is displayed on the monitor or printed out. The millions of devices execute the simple steps, some in sequence and some simultaneously. Apparently complex feats are therefore achieved in unbelievably short times. Not really surprising: we have seen what a large swarm of locusts can do to a country the size of Uganda overnight.

The large number of devices handling the same process clearly needs a parade commander who tells them when to move. This is the clock. A clock speed of say 300 MHz means that each of the millions of devices is able to execute 300,000,000 simple steps per seconds. A machine with a clock of 600MHz will do the same job in about half the time. For the last twenty years or so, this speed has been doubling every 18 months. We can therefore look at the computer as a very efficient abacus, albeit billions of times faster, and using binary instead of decimal arithmetic: A computer, by its very name, was originally just an arithmetic device. The modern computer has, in addition to its arithmetic function, storage (permanent memory, for example the hard disk drive), memory where data can reside temporarily (random access memory, or RAM), a keyboard for convenience of data entry and control, and a display for feedback and presentation to the user. The use of systems based on binary digital arithmetic for data acquisition, storage, and analysis has added advantages: storage space is reduced; and data acquisition as well as analysis is much cheaper and faster. Currently, the word digital, with all its connotations of trendy; speed; accuracy, is almost invariably used to mean binary digital.

**The hardware, the software, the methods, and the know -how required or used in acquiring, storing, processing, and displaying data and information is collectively known as Information Technology, IT.**

**ICT and Business**

ICT is the application of technology in the field of communication and related sectors. The use of ICT is due to the most imminent reason of establishing a perfect communication with both sender and receiver gaining the required information and creating an efficient feedback.

Presently in Bangladesh, as a developing country, the use of ICT has flourished at a striking rate. New business ideas are now entering the national market and, with the help of ICT, are creating an international platform. Ranging from ship-wrecking to raw material and garment and from banking to outsourcing orders, the national economy has for the past years seen immense development due to the assistance of ICT.

Application of ICT starts from mobile networking, credit card machine, EPOS terminal at supermarket, internet, intra and extranet usage, call centre, online banking and etc.

Latest development in ICT has been the introduction of WIMAX in the networking system. This high speed networking has allowed faster response to ordering and fulfilling the requirement of them.

The basic difference between the technology based business and the nontechnology based business are their size. Business size has greatly been determined by the use of ICT.

Bangladesh has seen the use of ICT since the 18th century with the first introduction of computer. Then from 19th century with mobile phones and network, business further expended internationally. Simultaneously, internet got into the area which assisted into growth and advancement of the national business.

However, much of the business in the country is craft based. Thus still use of ICT has not become that important.

Quotation by Shariful Anwar:

“If ICT is Lock,

Future will be shock”

“Tomorrow is the future,

We are on the way”

**From: Ali yousef, Bahrain**

**3rd year secondary**

**This is  an essay about the role of  ICT in business**

**Information and Communication Technology** or **ICT** allow users to participate in a rapidly changing world in which work and other activities are increasingly transformed by access to varied and developing technologies.

ICT tools can be used to find, explore, analyze, exchange and present information responsibly and without discrimination. ICT can be employed to give users quick access to ideas and experiences from a wide range of people, communities and cultures.

 **Economic Impacts**

In recent decades widespread incorporation of ICT into many tiers of business, political processes and eructuring of the global economy. ICT have increased international interconnectedness and speed up the process of [globalization](http://en.wikipedia.org/wiki/Globalization). They have been ICT, in conjunction with globalization and the information revolution, have reshaped the workforce. By increasing the speed of international communication, ICT have enabled corporations to [outsource](http://en.wikipedia.org/wiki/Outsource) jobs, both in the manufacturing as well as [white collar](http://en.wikipedia.org/wiki/White-collar_worker) sectors. While this lowers production costs and, as a result, the cost of goods, it has also had fundamental and often detrimental impacts on labor conditions.

 **Social Impacts**

ICT has affected societies on many levels. They have extended the reach of public administration, leading to a centralization of regional management into urban centers.

They have led to new forms of employment in innovation and production of ICT and a demand for highly-skilled specialists. However, ICT have also enabled professionals in certain industries to be replaced by unskilled workers, or even made entirely redundant. Proponents of ICT portray this as a ‘re-skilling’ of the workforce, while to detractors it is a ‘de-skilling’ process

The diffusion of ICT within societies is varied, with some institutions and sections of society having greater access to ICT than others. These divisions are reflected in the content of For example the English language, which is understood by only 10% of the worlds population, accounts for approximately 80% of internet content

Despite these imbalance in power relations, many [social justice](http://en.wikipedia.org/wiki/Social_justice) movements believe ICT can be used to promote equality and empower marginalized groups. These groups advocate ICT as a means of providing accessible and affordable information and as a platform for voices that might otherwise go unheard. and ICT helps with hard works and business with communications and that is why ICT is important    .

From: Al-Basheer bin Al-Munther Basic school (5-8)

Teacher : Majid Ambusaidi -- Oman

Name of project: Roll of Information and Communication Technology ( ICT ) in Business

City: Dhaka

Most of my students like to deal with technology and to use computers, therefore this project will definitely activate what they like. Roll of information and communication Technology in Business is a wide topic but not close to our school environment. But the way of visiting will help them collect and gain different information about ( ICT) and it will give them a chance to look around for exploring .

 Seven of my students have decided to do the project as one group by visiting some institutes and collecting the information . They will try to cover all the ideas about the topic.

The students have visited the Omani Scientific Institution in Nizwa and they collected this information as a report of what they have seen and met:

The main objective at the Omani Scientific Institution is to develop ICT skills across a number of packages including Word, Excel, Access, PowerPoint and Dreamweaver.  Real life projects are given to students to help aid their understanding. They have said that it is hoped that our students will improve effective practical ICT skills and understand how ICT affects business and society.  Students will develop effective transferable skills.

The ICT curriculum continues to build upon the skills students have already started to develop in the previous years. Pupils will use a wide range of software packages and the internet to help them to search and select appropriate information for a task, design electronic publications and develop ICT based models.  Pupils start by learning about ICT skills for business and the use of computing in today’s business society.  From here pupils move to look at creating their own computer graphics in line with business requirements.

  Our students currently undertake an AS Level Applied ICT Double Award that enables them to study units which include ICT and Society, Website Design, ICT and Organizations, Computer Art Work and Data Handling course is only running with existing Year 13 students and will not be offered in the Autumn of 2010.

**Business for Education**

We have two business related courses offered at the forth year.  GCSE Business Studies and GCSE Business & Communication Systems.
Business Studies covers a broad range of subject including:-
**Business Studies – Key Stage 4**In Business Studies, students research many aspects of business organisations and how they are organised. They are introduced to the real world businesses and markets in local, national and international contexts.  They look at the nature of business enterprise and the reasons why some businesses succeed and others fail.  They establish the importance of markets and competition as well as considering the role of governments and the EU in business organisation.  From  here pupils go onto study in depth a number of other topics such as People in Business – including recruitment and selection, Production, Finance and Marketing.  Students will also have the opportunity to explore business aims and objectives as well as the different types of business organisations.

**Business & Communication Systems**

Is a more practical course which embodies elements of Business Studies and ICT.  Students learn practical office skills such as work processing, using databases, spreadsheets and desktop publishing.  In addition they also learn about:-

* Office organisation and management
* Recruitment and Human Resource Management
* Communication within a business
* ICT in Business
* Business organization