

7. The ways in which IT is used

Assessment Objectives	Applications	Hardware requirements	Software Requirements
Control systems	Maintaining constant physical conditions: Air conditioning systems Central heating systems Refrigeration Car manufacture: Industrial robots Medical applications: Intensive care Process control	Robot Temperature sensor Moisture sensor Pressure sensor Light sensor	Control software
Working practices	Home working: Managers of offices Sales staff etc. Remote working: Sales staff Site workers Office based working: Virtually all workers Through the use of: Video conferencing Phone conferencing Instant messaging Faxing	Laptop computer Desktop computer Mouse Keyboard Printers (laser & inkjet) Scanner Modem Fax machine Mobile telephone Web cams Microphones Telephones	Word processing DTP Spreadsheet Database Organising software Communications software Web browser
Use of ICT in Advertising	Product advertising Business advertising Service advertising All of these through: Websites Multimedia presentations Flyers Posters	Computers Mouse Keyboard Printer (laser and inkjet) Scanner Modem Microphone Speakers Video camera Digital camera	Web authoring packages Word-processing DTP Spreadsheet Database Communications software
Use of ICT in Teaching and learning	Schools, Universities, Colleges: CAL CBL Computer aided assessment Record keeping Examination boards: Computer aided assessment	Computer Mouse Keyboard Printers (laser and inkjet) Scanner (for OMR) Overlay keyboard Interactive whiteboard	Web browsing software Web authoring software Overlay software Database Spreadsheet Assessment software

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Use of ICT in Publishing	Printing: Books, Magazines Newspapers All through: Computerised plate making Computerised typesetting Facsimile transmission	Web offset machines Computers Digital cameras	Photo image editing DTP
Use of ICT in Time management	Managers of offices: Organising meeting times Arranging workload Research and development projects Construction project management Identifying project progress Daily and weekly planning	Computers Laptops PDA	Time management Time tracking Project tracking
Data management	Sequential file systems: Batch processing e.g. payroll Indexed sequential & random access files Hybrid batch and interrogational processing, e.g. payroll and personnel records combined. Relational database systems Interrogational databases e.g. customer database linked to sales records	Magnetic Tape Magnetic Disc Magnetic Disc	
Use of data management	Hierarchical database management systems: Business reporting e.g. sales marketing management reporting business performance management (BPM) budgeting and forecasting Network database management systems: Large organisations spread over wide geographical area	Magnetic Disc Computer network	DBMS
Payroll applications	Producing payslips Financial reports	Computers	Payroll software

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Technical and customer support	Utility companies Mail order catalogue firms Telephone call centres Customer support for computer hardware and software On-line help lines	Computer networks Modems	Computer telephony integration Software
On-line services	On-line shopping: Purchasing goods Selling goods Online transaction services On-line banking - Opening and maintaining bank accounts	PC, Modem	Internet browser

How organisations use ICT

Organisations	Applications	Hardware Requirements	Software requirements
Expert Systems	<ul style="list-style-type: none"> • Mineral prospecting: Interpretation - • producing probabilities from given data • Investment analysis • Financial planning • Insurance planning: • All through prediction: • Deducing future events from current data • Car engine fault diagnosis • Medical diagnosis • Route scheduling for delivery vehicles • Plant identification Animal identification • All through diagnosis: producing possible solutions from given data 	<ul style="list-style-type: none"> • Computer • Mouse • Keyboard • Laser Printer 	<ul style="list-style-type: none"> • Knowledge base editor • Inference engine
Monitoring and Measurement	<p>Use of sensors in:</p> <ul style="list-style-type: none"> • Medical applications • Weather monitoring • Climate monitoring • Monitoring environment • Scientific experiments to measure physical variables such as: temperature, pressure, humidity, moisture, light, sound, blood pressure, pH 	<ul style="list-style-type: none"> • Computers • Mouse • Keyboard • Speakers • Printers • Sensors • Interface box 	<ul style="list-style-type: none"> • Spreadsheets • Databases • Measuring software • Data logging software
Project management	<ul style="list-style-type: none"> • Software development • Building construction • Business efficiency 	<ul style="list-style-type: none"> • PCs 	<ul style="list-style-type: none"> • PM Software • Planning software • Gantt chart software • Timeline

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			software
Modelling	<ul style="list-style-type: none"> • Economic • Prototype • Climate • Simulations • Profit forecasts • Architecture • Weather forecasting • Air pilot training • Car driver training • Nuclear research • Geology/predicting deposits 	<ul style="list-style-type: none"> • Computers • Keyboard • Mouse • Graph plotters • Printers 	<ul style="list-style-type: none"> • Spreadsheets • CAD, CAM • Purpose built • Software
Market Research	Research in: <ul style="list-style-type: none"> • Advertising Media • Public opinion • Techniques: • Personal interviewing • Phone interviews • On-line data capture 	<ul style="list-style-type: none"> • PCs • Mainframes • Interactive hand held devices 	<ul style="list-style-type: none"> • Internet software • Database management • Software
Research Applications	Medicine: <ul style="list-style-type: none"> • Developing new drugs • Genetic Analysis • Science: • Space research • Universities • Education: • ICT in education • Teacher education 	<ul style="list-style-type: none"> • Super computers • PC networks 	<ul style="list-style-type: none"> • Spreadsheets • Databases • Advanced Programming
Online Applications	Shopping: <ul style="list-style-type: none"> • Purchasing goods • Banking: • Maintaining accounts • Booking: • Holidays • Train tickets • Plane tickets • Cinema tickets • Theatre tickets 	<ul style="list-style-type: none"> • PC networks • Modems 	<ul style="list-style-type: none"> • Internet browsers • Authoring packages • Database
Stock control	Point of sale: <ul style="list-style-type: none"> • Retail industry/ supermarkets • Manual: • Manufacturing industry • Wholesale/suppliers • Just in time 	<ul style="list-style-type: none"> • POS terminals • Bar code readers • Electronic scales • Numeric keypads • PCs • Memo pads 	<ul style="list-style-type: none"> • Databases • Bar code reading software • Purpose written • Software