



**Palestinian National Authority  
Palestinian Central Bureau of Statistics**

**Business Survey on ICT, 2007**

**User Guide**

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## Concepts and Definitions

### **Enterprise**

An economic entity that is capable to in its own right of owning assets, incurring liabilities and engaging in economic activity and transaction with other entities.

### **Economic Activity**

The kind of work which is done by the establishment, and the main economic activity is the activity that contributes to the largest value added in establishments practicing more than one activity. The UN International Industrial Classification of all Economic Activities, third revision (ISIC-3), was used for coding the activities at the five digit.

### **ICT**

It is used to describe the tools and the process to access, retrieve, store, organize manipulate, produce present and exchange information by electronic and other manual automated means.

### **Internet**

A worldwide public computer network. Organizations and persons can connect their computers to this network and exchange information across a country and/or across the world. Internet provides access to a number of communication services including the World Wide Web and carries email, news, entertainment and data files.

### **Intranet**

It is a private computer network that uses Internet protocols and network connectivity to securely share part of an organization's information or operations with its employees. Sometimes the term refers only to the most visible service, the internal website.

### **Extranet**

It is a private network that uses Internet protocols, network connectivity, and possibly the public telecommunication system to securely share part of an organization's information or operations with suppliers, vendors, partners, customers or other businesses. An extranet can be viewed as part of a company's Intranet that is extended to users outside the company (e.g., normally over the Internet).

### **Local Area Network (LAN)**

It is a computer network covering a small geographic area, like a home, office or group of buildings, e.g., a school. The defining characteristics of LANs, in contrast to wide-area networks (WANs), include their much higher data-transfer rates, smaller geographic range, and lack of a need for leased telecommunication lines.

### **Wide Area Network (WAN):**

A computer network that covers a broad area (i.e., any network whose communications links cross metropolitan, regional, or national boundaries. The largest and most well-known example of a WAN is the Internet

**Virtual Private Network (VPN)**

A computer network in which some of the links between nodes are carried by open connections or virtual circuits in some larger network (e.g., the Internet) instead of by physical wires.

**Wireless Network**

Type of computer network that is wireless, and is commonly associated with a telecommunications network whose interconnections between nodes is implemented without the use of wires, such as a computer network (a type of communications network). Wireless telecommunications networks are generally implemented with some type of remote information transmission system that uses electromagnetic waves, such as radio waves, for the carrier and this implementation usually takes place at the physical level or "layer" of the network.

**Dial-up Internet Access**

It is a form of Internet access via telephone line. The client uses a modem connected to a computer and a telephone line to dial into an Internet service provider's (ISP) node to establish a modem-to-modem link, which is then routed to the Internet.

**E-mail**

It is a means for exchanging messages, texts and attached files among internet or intranet users.

**E-Commerce**

It is the conducting of business communication and transactions over computer networks and through individual computers linked to the World Wide Web. Strictly defined, e-commerce is the buying and selling of goods and services, and the transfer of funds, through digital communications.

**Digital Subscriber Line (DSL)**

It is an Internet connection via modem and dial-up software utilizing the Public Switch Telecommunications Network (PSTN).

**Integrated Services Digital Network (ISDN)**

A digital access technique for both voice and data. This is a digital alternative to an analog public switched telephone service and carries data or voltages consisting of discrete steps or levels, as opposed to continuously variable analog data. ISDN enables digital transmission over the PSTN.

**Asymmetric Digital Subscriber Line (ADSL)**

A form of DSL, a data communications technology tool, that enables data transmission over copper telephone lines faster than a conventional modem.

**Satellite**

A satellite stationed in geosynchronous orbit that acts as a microwave relay station, receiving signals sent from a ground-based station, amplifying them, and retransmitting them on a different frequency to another ground-based station. Satellites can be used for high-speed transmission of computer data.

**Wireless**

Includes fixed wireless, mobile wireless and satellite Internet connections.

**Flash Memory**

It is non-volatile computer memory that can be electrically erased and reprogrammed. It is a technology that is primarily used in memory cards and USB flash drives for general storage and transfer of data between computers and other digital products.

**Digital Camera**

It is a camera that takes video or still photographs, or both, digitally by recording images on a light-sensitive sensor.

**Video Conference**

A set of interactive telecommunication technologies that allow two or more locations to interact via two-way video and audio transmissions simultaneously.

**Server**

An open, standards-based computing system that operates as a carrier-grade common platform for a wide range of communications applications and allows equipment providers to add value at many levels of the system architecture.

**Open Source Software**

It refers to computer software under an open source license. An open-source license is a copyright license for computer software that makes the source code available under terms that allow for modification and redistribution without having to pay the original author. Such licenses may have additional restrictions such as a requirement to preserve the name of the authors and the copyright statement within the code.

**Anti Spam Appliances**

Are hardware devices integrated with on-board software that implement anti-spam techniques (e-mail) and/or anti-spam for instant messaging and are deployed at the gateway or in front of the mail server. They are normally driven by an operating system optimized for spam filtering. They are generally used in larger networks such as in companies and corporations, Internet Service providers (ISPs), universities, etc.

**Computer Use**

It is defined for this survey's purposes as the basic uses of the computer (during the last twelve months) such as: opening the computer and files as well, create, copy, paste, and saving files.

**Hacking**

Involvement in computer security/insecurity, to discover exploits in systems (for exploitation or prevention), or in obtaining or preventing unauthorized access to systems through skills.

**Firewall**

It is a device or set of devices configured to permit, deny, encrypt, or proxy all computer traffic between different security domains based upon a set of rules and other criteria.

**Secure Sockets Layer (SSL):**

Cryptographic tool that provides secure communications on the Internet for web browsing, e-mail, Internet faxing, instant messaging and other data transfers.

**Modulator\Demodulator (Modem)**

A hardware device that enables a computer to transmit and receive information over telephone lines. The modem is responsible for converting the digital data used by your computer into an analog signal used on phone lines and then converting it back once received on the other end.

**Domain Name**

It is the unique name by which a network-attached device. It is used to identify a particular host in various forms of electronic communication such as the World Wide Web, e-mail.

**Website**

Location on the World Wide Web identified by a web address. Collection of web files on a particular subject that includes a beginning file called a home page. Information is encoded with specific languages (Hypertext mark-up language (HTML), XML, Java) readable with a Web browser, like Netscape's Navigator or Microsoft's Internet Explorer.

**Web Hosting Service**

A type of Internet hosting service that allows individuals and organizations to provide their own websites accessible via the World Wide Web. Web hosts are companies that provide space on a server they own for use by their clients as well as providing Internet connectivity, typically in a data center.

**Privacy Policy**

Is a legal notice on a website providing information about the use of personal information- particularly personal information collected via the website by the website owner. Privacy policies usually contain details of what personal information is collected, how the personal information may be used, the persons to whom the personal information may be disclosed, and the security measures taken to protect the personal information.

**E-Government**

It refers to the use of internet technology as a platform for exchanging information, providing services and transacting with citizens, businesses, and other arms of government. It may be applied by the legislator, judiciary or administration, in order to improve internal efficiency, the delivery of public services, or processes of democratic governance.

**Reference Date**

The date referred to in calculating all set of indicators in this survey is between 01/01/2007 to 31/12/2007.

### **Survey Questionnaire**

In light of identifying data requirements, the survey instrument was developed following a review of international recommendations and experiences of countries in this area, and following discussion with stakeholders, through a workshop at PCBS to discuss producers and indicators of the survey.

In addition to identification information and data quality control, BICT 2007 survey instrument consists of three main sections, namely:

**Section one:** Includes readiness, access to ICT; this section contains a collection of examples about the existence of the necessary infrastructure for the use of technology and tools and instruments in the business, such as the availability of the computer and Internet service. It also provides a range of sophisticated devices associated with the use of technology such as telephone, fax, mobile phone, printers, and other related issues.

**Section two:** includes a series of questions about the use of Internet and computer networks in various activities and projects of economic enterprises, such as using the Internet, and networks to conduct commercial transactions buying and selling, and obstacles faced by Palestinian enterprises in the use of networks and Internet in their economic activities and implementation electronically of commercial transactions.

**Section three:** includes questions about the future direction of the enterprises in the use of means and tools of ICT, as well as expenditures for some tools and means of ICT that have been adopted.

### **Data Set Linkage**

The data set are merged into one data file there is no need for key variable.

### **Target Population**

The sample is a regular stratified random sample of one stage. The strata of less than 30 enterprises and enterprises that operate 30 or more workers was included. Enterprises were divided into three levels, namely:

First level, geographical classification of enterprises and classified into two regions: the West Bank and Gaza Strip.

Second Level, economic activity of the enterprises classified according to International Industrial Classification for Economic Activities.

Third level, employment size category of the enterprises classified according to the number of employees as follows:

1. Enterprises that operate with less than 5 employees.
2. Enterprises that operate with 5-10 employees.
3. Enterprises that operate with 11-29 employees.
4. Enterprises that operate with 30 employees and over.

## **Sample Size and Design Frame**

### **Target Population**

The target population consists of all operating private enterprises in the Palestinian Territ.

### **Sampling Frame**

The sampling frame is the list of all operating private enterprises enumerated in the Establishments Census 2007.

### **Sample Size**

The sample size is 2,966 enterprises, of which 1,948 are enterprises in the West Bank and 1,018 enterprises in Gaza Strip.

### **Weighing**

Weights have been calculated for each sampling unit. Weight reflects the sampling procedures. Adjusted weights are important to reduce bias resulting from non-responses. Also “adjusting” gave consideration to the changes since the time of the Population, Housing and Establishments Census, 2007 and the time of carrying out the survey.

### **Variance Calculation**

It is necessary to compute standard errors of the principal survey estimations so that a user can identify the accuracy of estimations and the survey reliability. Statistical errors can be measured. Frequently they are measured by the stranded error, which is the positive square root of the variance. The variance of this survey has been computed by using the “programming package” SPSS whereby the method of Ultimate Cluster is used to calculate variance.

## **Data Collection**

### **Instructions and Training manual**

The training manual covered all aspects dealing with fieldwork and filling in questionnaires. Moreover, it dealt with the tasks of each fieldworker in interviewing, and completion of questionnaire. Training manuals for supervisors and editors were prepared in order to secure team training and success of the project. A training course was held on May 3, 2008, and was completed on May 7, 2008, with the participation of 75 trainees. Training lasted for 5 days for fieldworkers and an additional day for supervisors, editors, and assistants.

The training course was divided into three parts: The first part discussed general issues such as designing statistical surveys, reaching selected enterprises, interviewing, tasks and duties and running the fieldwork. The second part was a lecture given by a specialist in ICT who clarified the technical concepts and terminology that was mentioned in the questionnaire. The third part emphasized the objectives of the Survey and allowed practical exercises on filling in the questionnaire.

### **Main Fieldwork**

A plan for the fieldwork was developed. At this stage, the fieldwork team and the tools (questionnaires, maps, sample lists) were prepared.

### **Data editing in the field**

The project's management developed a clear mechanism for editing the data and trained the team of editors accordingly. The mechanism was as follows:

- Receiving completed questionnaires on a daily basis;
- Checking each questionnaire to make sure that they were completed and that the data covered all eligible enterprises. Checks also focused on the accuracy of the answers to the questions.
- Returning the uncompleted questionnaires as well as those with errors to the field for completion.

### **Following up and Supervision**

Special follow-up patterns were designed for handing in and receiving questionnaires for all levels as well as the daily accomplishments of the interviewers. Supervisors had the task of allocating work to the teams using the list of enterprises. They provided daily and weekly reports to the fieldwork coordinator and the project's administration explaining the completed interviews, refusal cases, the inapplicable cases such as temporarily and permanent closed enterprises, interviews where results were not determined, and the cases that could not be communicated (after three contact attempts). The reports also included the technicians and coordinators' supervisory field visits.

## **Data Processing**

### **Preparation of Data Entry Program**

At this stage data entry program was prepared using ACCESS package. Data entry screens were designed. Also, rules of entry were determined in a manner that guarantees successful entry of questionnaires and verification instructions to check data after each entry. These instructions examine the variables on the questionnaire level.

### **Data Entry**

After having designed the data entry programme and testing it to verify readiness and, after having trained staff on dealing with data entry programme, data entry started on May 15, 2008, and was finished in June 28, 2008. The process of data entry was correlated with receipt of questionnaires from the field, whereby 15 staff members were engaged in data entry and verification of questionnaires. Data entry took place during two shifts, morning and evening, to secure achievement of data entry on time. Final tabulation of results was performed using the Statistical Package for Social Sciences (SPSS) for Windows (version 12.0).

### **Reference Date**

The date referred to in calculating all set of indicators in this survey is between 01/01/2007 to 31/12/2007.

### **Response Rates**

The survey sample consists of about 2,966 enterprises; 2,604 enterprises completed the interview, of which 1,746 enterprises were in the West Bank and 858 enterprises in Gaza Strip. The response rate was 92.2%.

### **Accuracy of the Data**

Since the data reported here are based on a sample survey and not on a complete enumeration, they are subjected to sampling errors as well as non-sampling errors. Data of this survey can be affected by statistical errors due to use of the sample. Therefore, the emergence of certain differences from the real values are expected to be obtained through a Census. Calculation of variation was done for the most important indicators in the survey; the sample error tables are attached in this report.

### **Data Comparison**

As the survey is carried out for the first time there are no national reference indicators with direct relationship to the survey indicators to be compared. Logic linkage of the survey indicators were done with each other in the same survey, and through such comparisons high consistency was noticed.

### **Quality Control Procedures**

PCBS developed tools to examine the quality of data. The re-interview questionnaire is one of those tools; the re-interview process aims to achieve certain objectives through several levels, especially the fieldworker level, in order to ensure that the fieldworker arrived and visit was conducted, and at the level of data collection and processing, in order to indicate any problem that may occur in the field through data processing and analysis of indicators to determine the reliability of the indicators.

The re-interview was conducted for 7% of the total sample, about 200 enterprises were systematically withdrawn on the basis of economic activity and size. Comparison was done between the main questionnaire and the re-interview questionnaire by the Commission for Data Quality at PCBS.

### Technical Notes

Some notes that should be taken into consideration when reviewing this report:

- U.S\$ was used in recording the values of the expenditures on technology; the US\$ exchange rate of currencies was adopted in the year 2007 as follows: JD, versus US\$ equals 1.41, NIS versus US\$ equals 4.11, and Euro versus US\$ equals 1.36.
- We do not recommend calculation of expenditure ratios on each communications technology services at the level of enterprise's employment size and economic activity, because of the significant weight of enterprises. In addition, we do not recommend calculation of average expenditures on communications technology services, because of high variation of expenditure values.
- There is high variance observed for the variable of electronic transactions via internet among small enterprises; because of the actual rare use of networks among small enterprises. Therefore please refer to the attached sample error table in this report to find the value of variation.

### Derived Variables

Variable name	Description	Values
Region	Region	1. West Bank 2. Gaza Strip
ISIC	economic activity	1. Industry 2. Construction 3. Trade 4. Transport & Communication 5. Financial 6. Services
RW	Relative Weight	Number
Size	Employment Size Category	1. (0-4) 2. (5-9) 3. 10 and more