

## USAGE OF INFORMATION TECHNOLOGY

**2008**

### Overview

The rate of usage of Information Technology (IT) in the business sector of Macao reached 47% in 2008, up by 4 percentage points compared with 2007, with higher usage rate in the service sector and large establishments or enterprises. As regards households, 76% had IT devices such as computers, Personal Digital Assistant (PDA), etc. Furthermore, 53% of the population aged 3 or above used computers, especially among youngsters and those with higher educational attainment.

### Business Sector

#### Rate of Usage

The rate of IT usage in the business sector reached 47% in 2008 and the major purposes of using IT were word processing (23%), archives (20%) and accounting (15%). Among the establishments or enterprises using IT, 80% have connected to the Internet, which was mainly used for information search (39%) and purchasing (17%).

Analyzed by industry, IT has been fully adopted in the Gaming Sector; Travel Agencies and the Service Sector had a usage rate of 97% and 80% respectively, while the Restaurant Sector recorded the lowest rate of 29%. In addition, the rate of IT usage of the Wholesale & Retail Trade (43%) registered a notable increase of 7 percentage points year-on-year.

#### 1- Usage of Information Technology in Business Sector

Industry	Total No. of Establishments/ Enterprises	No. of Establishments/ Enterprises Using IT	Rate of Usage (%)			
					Internet Connection	
			2008	2007	2008	2007
<b>Total</b>	<b>15 800</b>	<b>7 480</b>	<b>47</b>	<b>43</b>	<b>80</b>	<b>81</b>
Industrial Production	1 045	683	65	63	85	89
Construction	1 510	917	61	64	91	96
Travel Agencies	155	150	97	93	97	92
Hotels	86	55	64	61	95	95
Restaurants	1 524	436	29	25	#	#
Transport, Storage & Communications	408	254	62	61	86	87
Service Sector <sup>a</sup>	614	489	80	78	88	73
Gaming	10	10	100	100	#	#
Wholesale & Retail Trade	10 448	4 486	43	36	76	87

<sup>a</sup> Coverage of the 2008 Service Sector excluded Real Estate Agencies; therefore, figures on 2007 has been revised accordingly.

# Confidential data

Official Statistics. Reproduction of these data is allowed provided the source is quoted.

Statistics and Census Service

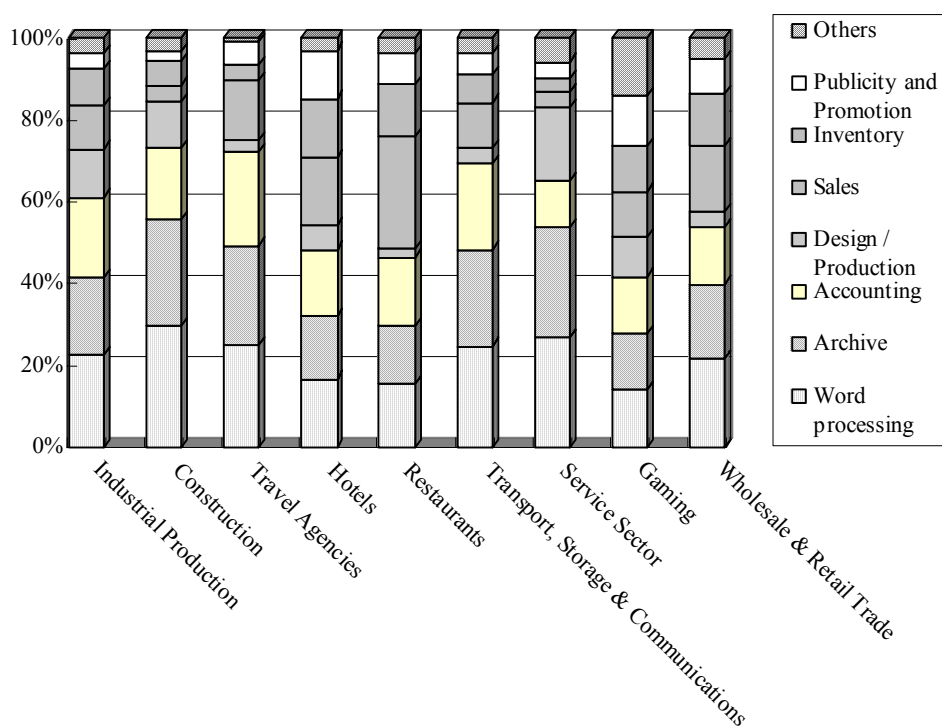
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Printed in December 2009

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The main purposes of using IT included word processing, archives, and accounting. Analyzed by industry, Restaurants used IT mainly for sales (27%) while Advertising, Conference and Exhibition Organizing Services used IT mostly for design/production (27%).

Graph 1- Purposes of Using Information Technology by Industry



Analyzed by size of establishments or enterprises, about 99% of the large establishments or enterprises (engaging with 100 or more persons) employed IT whereas the usage rate in small establishments or enterprises (with less than 10 persons) was 42%, up by 1 and 6 percentage points respectively year-on-year. In addition, 97% of the large establishments or enterprises using IT had access to the Internet.

2- Usage of Information Technology by Size of Establishments or Enterprises

No. of Persons Engaged	Total No. of Establishments/Enterprises	No. of Establishments/Enterprises Using IT	Rate of Usage (%)	
			2008	2007
<b>Total</b>	<b>15 800</b>	<b>7 480</b>	<b>47</b>	<b>43</b>
<10	13 362	5 610	42	36
10 – 49	1 949	1 395	72	74
50 – 99	276	264	96	96
≥ 100	213	211	99	98

In terms of sales and other receipts, the rate of IT usage stood at 84% for establishments or enterprises with total receipts amounting to MOP5,000,000 or more, contrary to only 35% for those with total receipts less than MOP500,000.

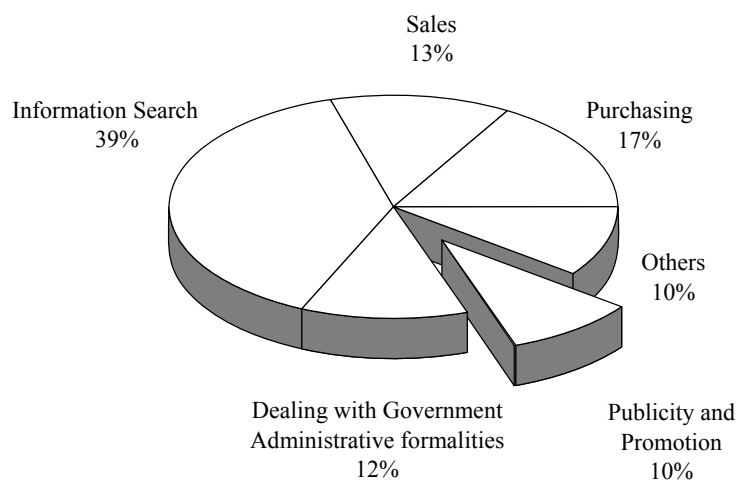
3- Usage of Information Technology by Sales and Other Receipts

Sales and Other Receipts (MOP)	Total No. of Establishments/ Enterprises	No. of Establishments/ Enterprises Using IT	Rate of Usage (%)	
			2008	2007
<b>Total</b>	<b>15 800</b>	<b>7 480</b>	<b>47</b>	<b>43</b>
<500,000	7 510	2 627	35	29
500,000 – 999,999	2 748	1 003	36	35
1,000,000 – 1,999,999	1 833	1 114	61	47
2,000,000 – 4,999,999	1 724	1 075	62	60
≥ 5,000,000	1 985	1 661	84	90

Internet Usage

With regard to Internet usage, 80% of the establishments or enterprises using IT had access to the Internet and the major purposes included information search (39%) and purchasing (17%), for which the rate of Internet usage of Travel Agencies and Hotels reached 97% and 95% respectively.

Graph 2- Usage of Internet



Expenses and Budget for IT

Among the establishments or enterprises using IT, 28% renewed or upgraded their IT equipment in 2008, of which 90% spent less than MOP50,000 while 2% spent MOP200,000 or more. Meanwhile, 24% installed additional IT equipment, with notable increase in the Gaming Sector (+90%) and Hotels (+71%). As regards the expenses, 87% of the establishments or enterprises spent less than MOP50,000.

## 4- Renewal and Additional Installation of IT Equipment by Industry

%

Industry	Renewal of IT Equipment					Installing Additional IT Equipment				
	Establishments/ Enterprises	Expenditure (MOP)				Establishments/ Enterprises	Expenditure (MOP)			
		Less than 50 000	50 000 to 99 999	100 000 to 199 999	200 000 or above		Less than 50 000	50 000 to 99 999	100 000 to 199 999	200 000 or above
<b>Total</b>	<b>28</b>	<b>90</b>	<b>6</b>	<b>2</b>	<b>2</b>	<b>24</b>	<b>87</b>	<b>6</b>	<b>3</b>	<b>4</b>
Industrial Production	49	90	6	2	1	31	79	9	4	8
Construction	27	90	6	3	1	24	86	7	6	1
Travel Agencies	21	91	6	3	-	32	81	6	10	2
Hotels	62	38	18	12	32	71	46	8	10	36
Restaurants	32	89	9	1	1	21	87	8	4	1
Transport, Storage & Communications	31	82	3	4	11	22	61	5	9	25
Service Sector	21	95	2	2	1	20	95	3	1	1
Gaming	70	-	-	-	100	90	-	-	-	100
Wholesale & Retail Trade	25	92	6	1	1	20	91	6	1	1

Note: Percentage may not add up to 100% due to rounding.

- Absolute value equals zero

With regards to the amount of IT budget for 2009, 95% of the establishments or enterprises would spend less than MOP50,000 and only 1% would spend MOP200,000 or more. However, for those not using IT in 2008, 4% plan to install computers in 2009.

## 5- Amount of IT Budget for 2009 by Industry

%

Industry	Expenses on IT (MOP)			
	Less than 50 000	50 000 to 99 999	100 000 to 199 999	200 000 or above
<b>Total</b>	<b>95</b>	<b>3</b>	<b>1</b>	<b>1</b>
Industrial Production	93	4	1	2
Construction	94	4	2	0 <sup>#</sup>
Travel Agencies	95	3	1	1
Hotels	42	18	7	33
Restaurants	92	6	1	1
Transport, Storage & Communications	89	2	3	6
Service Sector	94	6	0 <sup>#</sup>	0 <sup>#</sup>
Gaming	10	-	-	90
Wholesale & Retail Trade	98	1	1	0 <sup>#</sup>

Note: Percentage may not add up to 100% due to rounding.

- Absolute value equals zero

0<sup>#</sup> Less than half of the unit employed

## Household

### Rate of Possessing IT Equipment

In the fourth quarter of 2008, households possessing one or more item of IT equipment, such as desktop and laptop computer, PDA, smart phone and other Internet access equipment stood at 76%, with 87% having desktop computer and 32% having laptop computer.

Among the total number of households, 69% accessed to the Internet, with 98% using broadband.

6- Distribution of Households Possessing IT Equipment and Accessing to the Internet

Possessing IT Equipment			Accessing to the Internet	
Percentage of Total No. of Households	Of which:		Percentage of Total No. of Households	Of which:
	Desktop computer	Laptop computer		Using Broadband
76	87	32	69	98

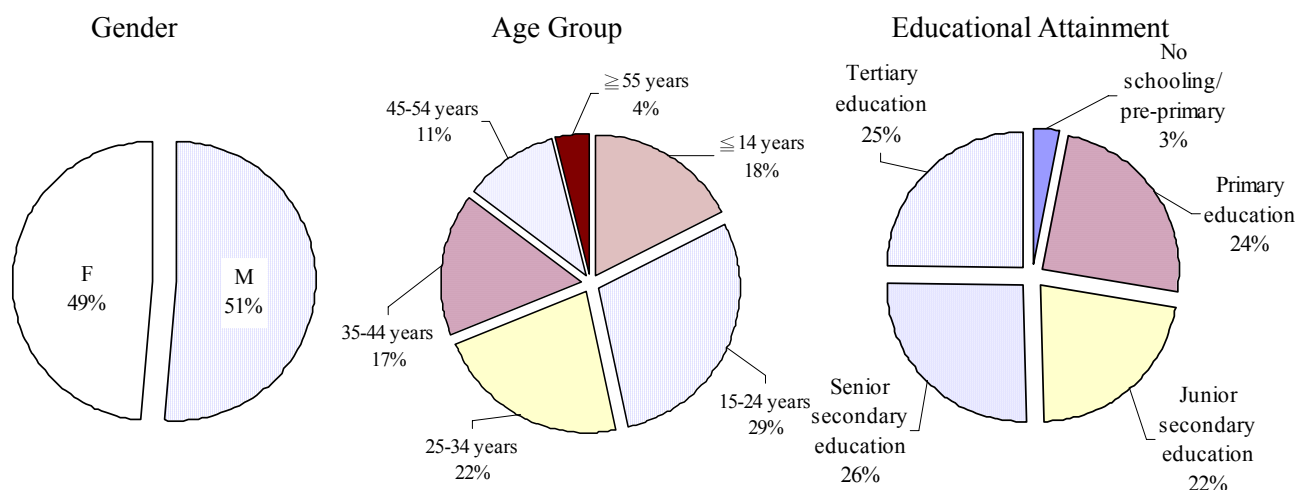
### Characteristics of Population Using IT Devices

Among the population aged 3 or above, there were 286,600 (53%) used computers within the quarter prior to the reference period, with 266,000 (49%) accessing to the Internet.

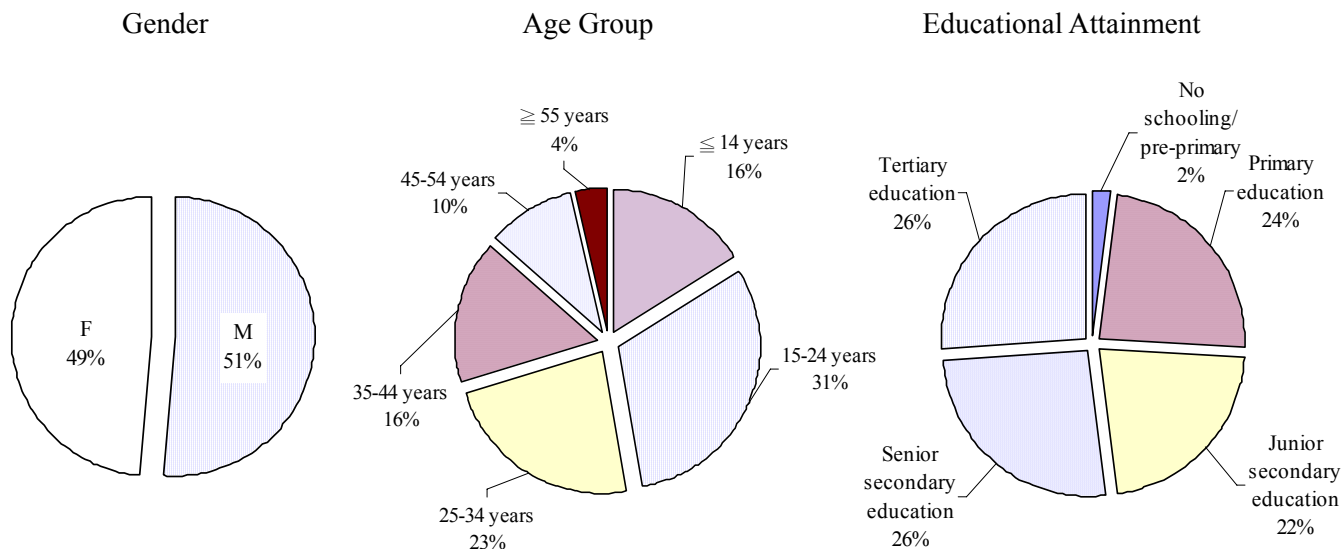
Analyzed by gender of the computer users, 51% were male; analyzed by age group, 29% aged 15-24 and 22% aged 25-34; as regards educational attainment, 51% had senior secondary or higher education.

Analyzed by gender of the Internet users, male accounted for 51% of the total; analyzed by age group, those aged 15-24 and 25-29 took up 31% and 23% respectively; with regard to the educational attainment, those with senior secondary education and tertiary education shared 26% each.

Graph 3 – Characteristics of Computer Users



Graph 4 – Characteristics of Internet Users



Rate of IT Usage

Analyzed by age group, the rate of computer usage and Internet usage was 90% and 89% respectively among those aged 15-24, which was followed by those aged 25-34, at 73% and 70% respectively. For those aged 14 or under, the respective rate was 72% and 61%, indicating that most youngsters are IT users.

IT usage is closely related with educational attainment; for those with tertiary education, the rate of computer usage and Internet usage was 88% and 86% respectively.

7- Distribution of Computer Users and Internet Users %

Population aged 3 or above		Computer Users	Internet Users
		53	49
<b>Gender</b>	Male	55	52
	Female	51	47
<b>Age Group</b>	≤ 14	72	61
	15-24	90	89
	25-34	73	70
	35-44	48	44
	45-54	30	25
	≥ 55	13	11
<b>Educational Attainment</b>	No schooling/pre-primary education	20	11
	Primary education	43	39
	Junior secondary education	48	44
	Senior secondary education	62	58
	Tertiary education	88	86
	Others	38	25

In respect of the location of accessing to the Internet, 91% of the users accessed to the Internet at home, 26% at work place and 19% in school. The major purposes of accessing to the Internet included information search and online services (87%), communication (84%), government services (46%), etc. Regarding the frequency of Internet usage, 67% accessing to the Internet on a daily basis.

8- Location and Purposes of Accessing to the Internet		%
<b>Location (Multiple answers accepted)</b>	At home	91
	At place of work	26
	In school	19
	At library	1
	At public facilities	1
	Others	2
<b>Purpose (Multiple answers accepted)</b>	Information searching and online services	87
	Communication	84
	e-Government	46
	e-banking	12
	Training and education	7
	Online purchasing/selling of goods and services	6
	Others	9

## Methodology

Data on usage of Information Technology (IT) in the business sector is obtained from the annual survey on different economic activities in 2008, including establishments or enterprises engaging in Industrial Production; Construction; Wholesale & Retail Trade; Travel Agencies; Hotels; Restaurants; Gaming; Transport, Storage & Communications; and Service Sector (Real Estate Management, Security Services, Cleaning Services, Advertising and Conference/Exhibition Organizing Services).

Data of IT usage of households is collected by using a supplementary questionnaire in the Employment Survey for the fourth quarter of the 2008, interviewing all individuals aged 3 or above.

### **The following statistical tables are available for download from our website**

1. Principal Indicators on Usage of Information Technology (IT) in the Business Sector
2. Usage of Information Technology by Number of Persons Engaged and Industry
3. Usage of Information Technology by Total Receipts and Industry
4. Usage of Internet by Number of Persons Engaged and Industry
5. Usage of Internet by Total Receipts and Industry
6. Computer and Internet Users by Gender, Age Group and Educational Attainment