

Feasibility Study

For

Increasing PC Penetration

| | |
|-----------------|------------------------------------|
| Client: | Information Technology Association |
| Implementation: | 3 Years Ending December 2007 |
| Prepared by: | Dakessian Consulting |
| Version #: | Final Draft |
| Date: | September 2004 |

Contents

| | |
|---|----|
| Executive Summary..... | 3 |
| 1 Current Financial Programs | 4 |
| 1.1 Postal Savings Fund..... | 4 |
| 1.2 Professional Associations | 5 |
| 1.3 Banks In Jordan | 9 |
| 1.4 Problems And Challenges..... | 9 |
| 1.4.1 Target Population..... | 9 |
| 1.4.2 Specifications & Configurations | 10 |
| 1.4.3 Institutional..... | 10 |
| 2 Need For A National Program | 11 |
| 2.1 Univesrity Students Program..... | 11 |
| 2.1.1 Outline | 11 |
| 2.1.2 The Numbers | 11 |
| 2.2 The 2340 Program | 12 |
| 2.2.1 Outline | 12 |
| 2.2.2 The Numbers | 13 |
| 2.3 PC Replacement Program | 13 |
| 2.3.1 Outline | 13 |
| 2.4 Pensioners' Program | 14 |
| 2.4.1 Outline | 14 |
| 3 Recommended Champions..... | 15 |
| 3.1 University Students Program..... | 15 |
| 3.1.1 Ministry Of Higher Education & Scientific Research..... | 15 |
| 3.1.2 Ministry Of Finance / Sales Tax | 15 |
| 3.1.3 Ministry Of Information & Communications Technology | 15 |
| 3.1.4 Other Stakeholders | 16 |
| 3.2 The 2340 Program | 17 |
| 3.2.1 Ministry Of Finance / Income Tax..... | 17 |
| 3.2.2 Other Stakeholders | 17 |
| 3.3 PC Replacement Program | 18 |
| 3.3.1 Ministry Of Finance / Sales Tax | 18 |
| 3.3.2 Minsitry Of Information & Communications Technology..... | 18 |
| 3.3.4 Other Stakeholders | 18 |
| 3.4 Pensioners' Program | 19 |
| 3.4.1 Ministry Of Finance / Sales Tax | 19 |
| 3.4.2 The Social Security Corporation..... | 19 |

Executive Summary

This feasibility study is the third and final deliverable under the contract with int@j. The contract stipulated the preparation a feasibility study to be presented to the Ministry of Information & Communications Technology (MoICT) with a suggested program to provide financing for PC's in Jordan.

A number of PC financing programs are currently underway either through large pension funds or financial organizations. In general, most of the financing programs were initiated for pure financial reasons without any efforts analyzing and predicting their impact on raising PC/Internet penetration rates. In general terms, the problems and challenges facing most of the current PC financing programs are not financial in nature but rather procedural. Problems and challenges were mostly related to:

- Target Population
- Institutional
- Specifications & Configurations

This report recommends a number of financing schemes that will impact PC/Internet Penetration rates. Due to the targeted and cross cutting nature of the recommended financing schemes, a number of different champions have been identified for each program with some champions naturally appearing across more than one program. The three main recommended programs are:

- 1st Year University Students Program
- PC Replacement Program
- Pensioners' Program

From the three recommended programs, the 1st Year University Students Program is expected to have by far the largest impact on constantly increasing PC/Internet penetration rates in the country.

1 Current Financial Programs

Jordan has a number of PC financing programs currently underway either through large pension funds or financial organizations. In general, most of the financing programs were initiated for pure financial reasons without any efforts analyzing and predicting their impact on raising PC/Internet penetration rates. Other factors such as the average salaries of beneficiaries, cost of living index, standard of living as well as social implications and human development were also not taken into consideration during the design of such programs.

Collectively, these facts complicated the research task to a certain extent because in most cases accurate information relevant to our research was either non-existent or not readily available. Following is a summary of the most prominent programs currently underway:

1.1 Postal Savings Fund

This program was originally designed to enable civil service employees to purchase personal computers financed by the Postal Savings Fund. Initially, PC purchases were financed on an installment basis using regular banking procedures based on market interest rates. The program was then further developed to finance PC purchases based on the Islamic Banking "Murabaha" model. Loan repayments for all cases were guaranteed by the transfer of a portion of the monthly salary of the civil servant in question to the Fund. A further development allowed non-civil service employees to benefit from the Fund without any guarantors or salary transfers. Beneficiaries were simply asked to sign promissory notes (similar to those used in the banking system) covering monthly payments for the financed amount.

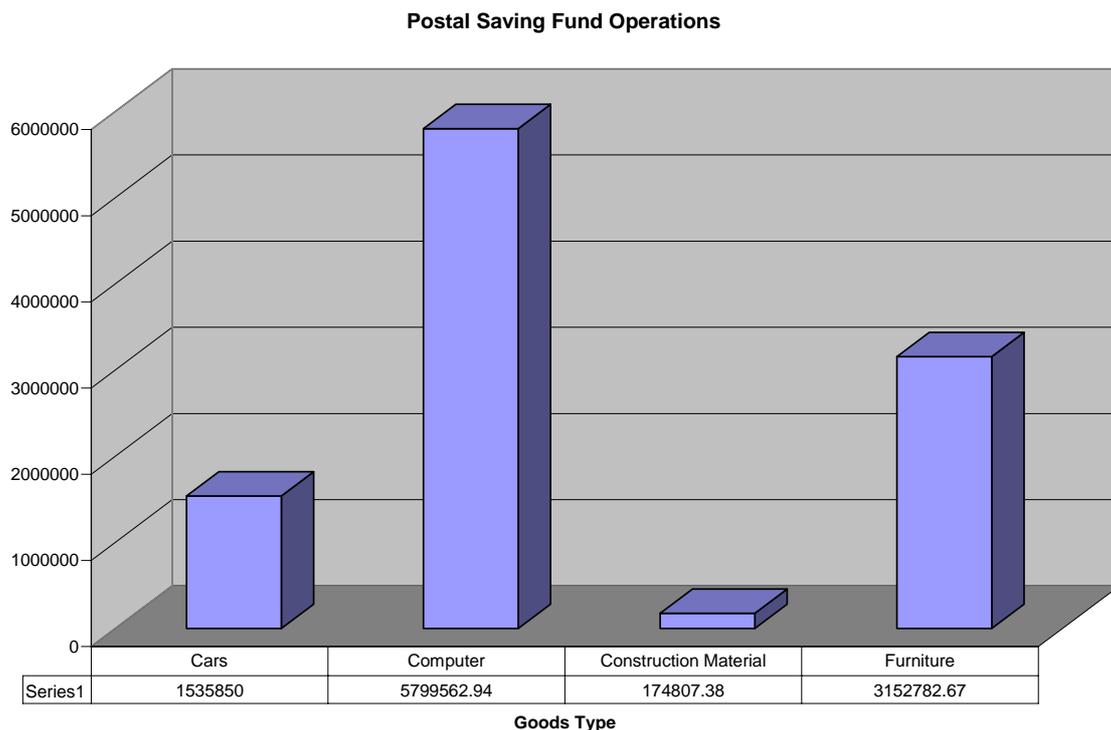
Accurate figures for the annual number of PCs financed and sold under this program were requested from the Fund on a number of occasions. Unfortunately, the figures were provided at a very late stage during the research:

- Over 12,000 PCs were sold over the past four years.
- The maximum amount allowable for financing was JD 800 per PC.
- Financing was done at a flat rate of 6% over three years.
- Financing was applicable to locally assembled PCs only.
- Financing was applicable to PC configurations with a modem for dial-up internet connectivity.

Table I PSF Numbers (Last Three Years)

| | JDs | Count | Units |
|------------------------|----------------|--------|--------|
| Cars | 1,535,850.000 | 429 | 458 |
| Computers | 5,799,562.000 | 9,525 | 12,001 |
| Construction Materials | 174,807.000 | 71 | 97 |
| Furniture | 3,152,782.000 | 2,009 | 2,612 |
| Total | 10,663,002.000 | 12,034 | 15,168 |

Source: Postal Savings Fund



Interestingly enough, this program was by far the most successful one in terms of numbers of PCs financed with a sizable impact on PC penetration rates. The ongoing privatization of postal services in Jordan (including that of the Postal Savings Fund) has somewhat reduced the popularity of this program.

1.2 Professional Associations

A number of professional associations in Jordan have designed and introduced PC financing schemes to benefit their members. Such schemes were designed to encourage association members to obtain new PCs and associated software at reasonable prices as well as a general attempt to bridge the existing digital divide at that time. The most prominent financing program emerging from such associations was implemented by Jordanian Engineering Association (JEA).

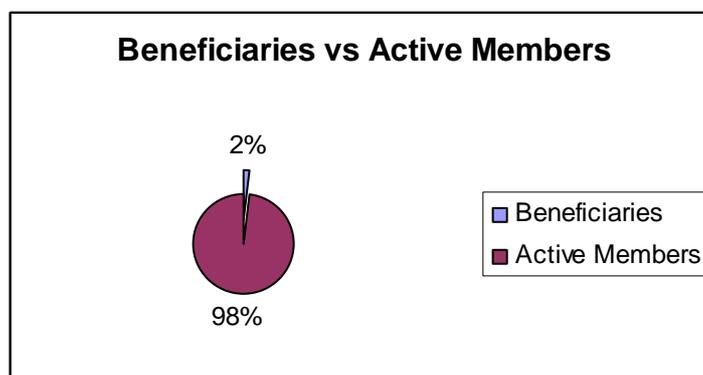
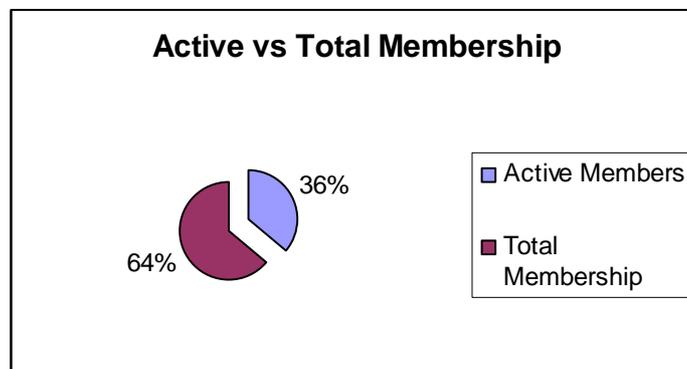
The JEA has a membership or over 55000 registered engineers. Their program was initiated a number of years ago benefiting members with "good standing order" which basically includes any member regularly paying annual JEA subscription fees. While the numbers of PCs sold was relatively low, the program is internally considered a success story.

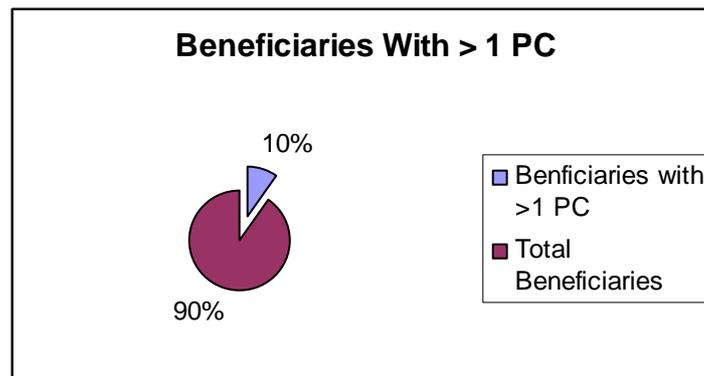
Table II JEA Membership Numbers

| | | |
|---|-----------------------------------|-------------|
| 1 | Number Of Members | 55000 |
| 2 | Number Of Active Members | 30929 |
| 3 | PC Program Beneficiaries | 560 |
| 4 | PCs Sold | 653 |
| 5 | Beneficiaries With More Than 1 PC | 61 |
| 6 | Total Financed (JD) | 478,693.000 |

Table II shows that the number of JEA members entitled to participate in the program are 30,929 members. The overall PC penetration rate for this program (beneficiaries vs active members) is around 2% which is rather low but not too far off the national average in Jordan.

A closer look at the numbers produced the following charts:





JEA also provided other details about their program in order to better understand beneficiaries purchasing trends, behavior and patterns. Most importantly, the numbers of PCs sold over the past five years provided an insight to some of the trends.

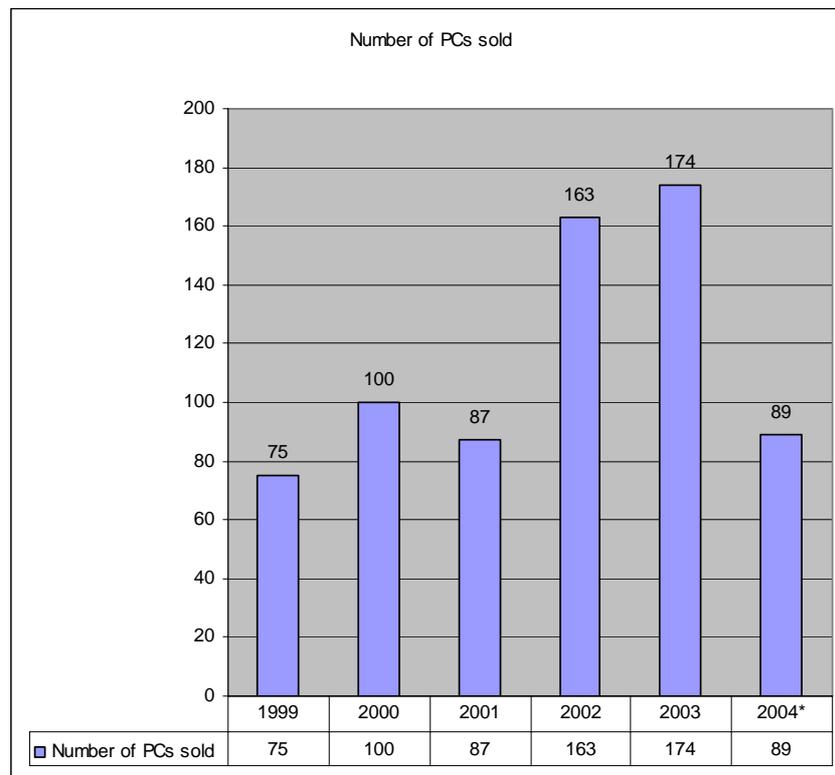
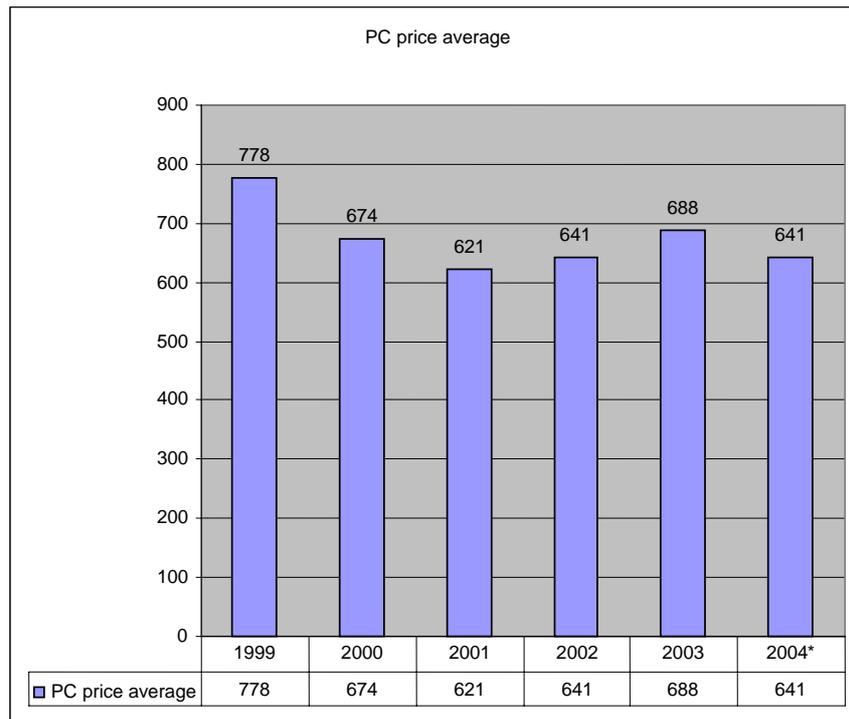
Table III Breakdown of Numbers Of PCs Sold

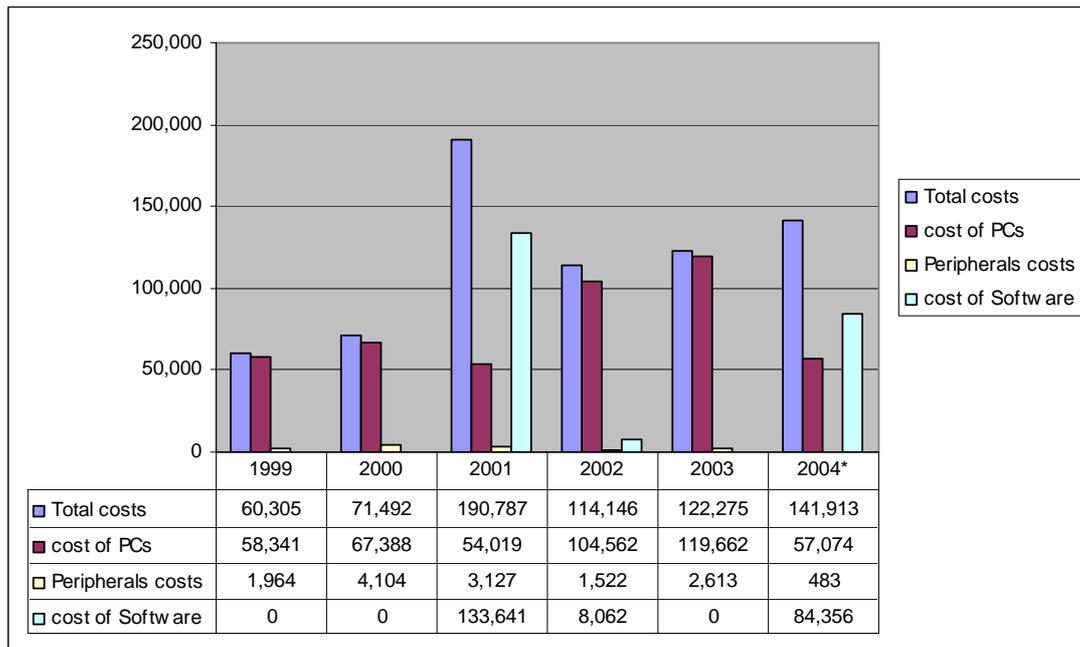
| | 1999 | 2000 | 2001 | 2002 | 2003 | 2004* |
|-------------------------------------|--------|--------|---------|---------|---------|---------|
| Number Of PCs Sold | 75 | 100 | 87 | 163 | 174 | 89 |
| Number Of Beneficiaries | 65 | 74 | 75 | 125 | 146 | 83 |
| Beneficiaries Owning More Than 1 PC | 6 | 6 | 6 | 17 | 9 | 3 |
| PC Price Average (JD) | 778 | 674 | 621 | 641 | 688 | 641 |
| Cost Of PCs (JD) | 58,341 | 67,388 | 54,019 | 104,562 | 119,662 | 57,074 |
| Cost Of Peripherals (JD) | 1,964 | 4,104 | 3,127 | 1,522 | 2,613 | 483 |
| Cost Of Software (JD) | 0 | 0 | 133,641 | 8,062 | 0 | 84,356 |
| Number Of Peripherals | 14 | 13 | 10 | 6 | 15 | 3 |
| Number Of Software Packages | 0 | 0 | 12 | 8 | 0 | 5 |
| Total costs | 60,305 | 71,492 | 190,787 | 114,146 | 122,275 | 141,913 |

(*) Figures available up to August 23rd 2004.

A number of interesting observations were made:

- The cost of software financed under the program jumped dramatically in 2001, which coincided with the enforcement of IPR laws in the country.
- The average price of a PC did not change much during the last five years, this was mostly due to due engineers purchasing high end state of the art PCs as well the general improvement of PC technology over the years balanced out the global downward trend in prices.





The JEA program has financed more than JD 700,000 in hardware and software purchases over the past five years. The increase in the numbers of PCs was attributed to a number of factors, ICDL training being one of them.

1.3 Banks In Jordan

Our research has concluded that specific financing programs for PC purchases do not exist in our banking system. Most local banks cover such financing under the small "Personal Loan" category without any indication as to the purpose of the loan, therefore extracting figures related to PC purchases was impossible.

1.4 Problems And Challenges

In general terms, the problems and challenges facing most of the current PC financing programs are not financial in nature but rather procedural. The problems and challenges fall into three main categories:

1.4.1 Target Population

- Financing programs are not specifically targeted towards certain population groups or cross sections. The adequacy of one financing program to fit the budgets, requirements and expectations of a wide section of the population is not always guaranteed.
- A shortage of marketing, awareness and promotional efforts by the financing programs.

- Available data shows that the impact of PC purchases financed under such programs on national PC/Internet Penetration was minimal due to the low numbers of PCs sold.

1.4.2 Specifications & Configurations

- Most PCs sold under such financing programs, whether imported or locally assembled, do not have top of the line configurations and specifications.
- Low end specifications are sometimes stipulated by the financing institution in order to reduce overall cost (capital and interest).

1.4.3 Institutional

- Procedural and bureaucratic complications hamper the speedy conclusion of financial transactions.
- The absence of ISP's in such programs was noticeable.
- Limited funds and budgets for large projects.

2 Need For A National Program

2.1 Univesrity Students Program

2.1.1 Outline

This recommended program is designed to facilitate PC ownership for 1st Year University students enrolled in public/private universities in the country. The proposal is requires a regulation by universities stipulating that all 1st Year students must purchase PCs at a preferential price on installment basis. This program will allow students to purchase new PCs without an advanced payment or credit guarantees. A small surcharge of around 3-4 JDs needs added to the standard credit hour rate will be more than enough recover the cost of a new PC including bundled software and internet connection. Standard procedures for collecting tuition fees currently in place at universities will the guarantee the continued payment of installments under such a program until graduation.

2.1.2 The Numbers

A PC loan with 6% flat annual interest rate can be repaid over four years by adding a small premium to the average Credit Hour Cost at Jordanian universities. Calculations are based on the following assumptions:

- Average Credit Hour Cost is JD 30. The full range is between JD20-JD85 depending on field of study.
- The total number of Credit Hours required for graduations is around (140) hours spread over (4) years.

A simple calculation based on the above shows that an increase of JD 3.500 - JD 4.000 on the average Credit Hour Cost is feasible to cover total cost. The suggested increase will be naturally dependent on the average cost of the PC in question as well as the applicable interest rate.

Table IV Sample Loan Calculation

| | | | |
|---|--|---------|---------------------------|
| 1 | Cost Of PC (JD) | 400.000 | |
| 2 | Flat Annual Interest Rate (%) | 6 | |
| 3 | Number Of Years | 4 | |
| 4 | Interest (JD) | 96.000 | $400 \times 6\% \times 4$ |
| 5 | Total Amount (JD) | 496.000 | $400 + 96$ |
| 6 | Credit Hour Share (JD) | 3.540 | $496 / 140$ |
| 7 | Average Credit Hour Cost (JD) | 30.000 | |
| 8 | Increase In Average Credit Hour Cost (%) | 11.8 | $3.540 / 30$ |

Based on current figures from the Ministry Of Education, this program will introduce more than 30,000 new PCs in September of each year on an annual basis. The academic nature of this program will ensure:

- A sustainable increase in PC penetration rates for years to come.
- Increased demand for PC upgrades and replacement parts.

2.2 The 2340 Program

2.2.1 Outline

The 2340 program is named after the age group to be targeted. There are a number of factors make this age group an interesting target for a dedicated program:

- The median age of the population is 21.8 years.
- A high percentage of this age group is usually well educated.
- The lower end of this age group consists of employment seekers on the threshold of starting their professional careers.
- The mid end of this age group has already started raising a family.

A number of Jordanian NGO's and Professional Associations have created some supporting programs to find and secure decent jobs for the newly graduating students. Since of these programs are dedicated to the preparation and advancement of professional skills, PC usage will naturally figure high on their agenda. Typical objectives are:

- Give new graduates a better chance in finding jobs by training them in relevant fields.
- Assist graduates in finding job opportunities in both local and foreign markets.

In terms of increasing PC/Internet Penetration, the expanded objectives for a program dedicated tor this age group include:

- Increase computer literacy within the group by training and by introducing mandatory ICDL courses with the purchase of a new PC through the program. The cost of the ICDL Program should be kept to minimum and incorporated with the price of the PC.
- Encourage families and/or individuals within this group to create and operate e-commerce websites hosted in Jordan generating additional income for such families or individuals. Costs of developing, hosting and operating such websites could be tax deductible over a number of years.

2.2.2 The Numbers

According to the latest figures available from the Department Of Statistics, Jordan's population distribution for the 23-40 age group is 1,364,134 representing almost a quarter of the country's population.

Table V Jordan Population Age Distribution 23-40

| Age | Male | Female | Total |
|------------|-----------|-----------|-----------|
| 23 | 59,300 | 51,567 | 110,890 |
| 24 | 58,851 | 46,982 | 105,857 |
| 25 | 52,020 | 41,055 | 93,100 |
| 26 | 48,433 | 44,580 | 93,039 |
| 27 | 45,181 | 42,536 | 87,744 |
| 28 | 41,164 | 38,520 | 79,712 |
| 29 | 40,823 | 39,472 | 80,324 |
| 30 | 39,145 | 41,453 | 80,628 |
| 31 | 39,456 | 35,973 | 75,460 |
| 32 | 38,058 | 39,755 | 77,845 |
| 33 | 33,580 | 39,058 | 72,671 |
| 34 | 30,925 | 32,009 | 62,968 |
| 35 | 33,897 | 32,416 | 66,348 |
| 36 | 31,197 | 31,258 | 62,491 |
| 37 | 27,806 | 30,116 | 57,959 |
| 38 | 27,889 | 25,130 | 53,057 |
| 39 | 24,744 | 27,877 | 52,660 |
| 40 | 24,414 | 26,927 | 51,381 |
| Total | 696,883 | 666,684 | 1,364,134 |
| Population | 2,866,200 | 2,613,800 | 5,480,000 |
| % | 0.243138 | 0.255063 | 0.24893 |

Assuming that a very modest 3-6% of this age group shows an interest and participates in such a program, this will create a new demand of 41,000 - 81,000 PCs each year positively impacting and considerably increasing PC/Internet Penetration Rates.

2.3 PC Replacement Program

2.3.1 Outline

It is recommended to design a program to update and modernize PCs in the country in line with latest technology and specifications. It should be applicable to private individuals that own old PCs on condition that they are not beneficiaries of any other

financing schemes. The program should allow a beneficiary to hand in and replace an old PC with a new one benefiting from a Sales Tax exemption as an incentive.

A side benefit from this program would be the availability of large numbers of old PCs that can be channeled to pre-qualified refurbishers and put to use wherever possible assisting the budgets of the numerous national IT initiatives currently underway.

2.4 Pensioners' Program

2.4.1 Outline

It is recommended to design a program to benefit pensioners and retired civil servants not participating in other financing schemes. The program should allow a beneficiary to purchase a PC on installments while at the same time benefiting from a Sales Tax exemption as an incentive.

3 Recommended Champions

Due to the targeted and cross cutting nature of the recommended financing schemes, a number of different champions have been identified for each program with some champions naturally appearing across more than one program:

3.1 University Students Program

3.1.1 Ministry Of Higher Education & Scientific Research

The Ministry of Higher Education & Scientific Research (MoHESR) is the government entity regulating the operations of public and private universities in the country. This places the MoHESR at the top of the champions list for this program. Recommended tasks for the MoHESR under this program are:

- Approve the regulations stipulating PC ownership for all 1st year students.
- Approve the increase in the standard credit hour rate to accommodate the recommended financing scheme.
- Follow-up and ensure implementation of scheme to the benefit of university students.
- Maintain lists of approved PC suppliers taking part in this program.

3.1.2 Ministry Of Finance / Sales Tax

The Ministry of Finance / Sales Tax (MoF) is the government entity regulating the imposition, collection and re-imburement of Sales Tax. Recommended tasks for the MoF under this program are:

- Approve the exemption of Sales Tax for PCs financed under this program.
- Implement necessary controls to prevent abuse of program by non-beneficiaries.
- Maintain lists of pre-qualified suppliers and service providers under this program.

3.1.3 Ministry Of Information & Communications Technology

Under this program, The Ministry of Information & Communications Technology is expected to have a dual advisory role. Recommended tasks for the MoICT under this program are:

- Pre-qualify PC Importers, Assemblers and Re-furbishers for this program.
- Pre-qualify ISPs for this program.
- Set PC specifications and configurations guidelines.

3.1.4 Other Stakeholders

The implementation of this particular program requires the availability of sufficient funds during the months of August-October of each year. Based on an average cost of JD 400 per PC for 30,000 PCs, the size of the fund will be around JD 12 million. Recommended tasks for [Funds and Financial Institutions](#) under this program are:

- Ensure availability of funds for the required periods.
- Agree on a reasonable and flat interest rate for three years.
- Coordinate with other champions to streamline the financing process in order to avoid procedural bottlenecks.

By default, the implementation of this particular program is directly linked with the start of each university academic year. This places short term financial burdens on [PC importers, assemblers and refurbishers](#) to ensure the availability of PCs in sufficient numbers to satisfy the surge in demand during the months of September and October of each year. Recommended tasks for PC importers, assemblers and refurbishers under this program are:

- Qualify for listing with the MoHESR under this program.
- Agree on the preset specifications and configurations as set by the MoICT for this program.
- Supply the standard suite of Microsoft Office applications at preferential rates specific to this program.
- Ensure an adequate supply of PCs to satisfy the expected seasonal surges in demand.

Under this program, the role of [Internet Service Providers \(ISPs\)](#) is similar to the other programs. Recommended tasks for the ISPs under this program are:

- Qualify for listing with the MoHESR under this program.

- Introduce special rates for university students to be bundled with the cost of the PC.

3.2 The 2340 Program

3.2.1 Ministry Of Finance / Income Tax

The Ministry of Finance / Income Tax (MoF) is the government entity regulating the imposition, collection and re-imbusement of Income Tax. Recommended tasks for the MoF under this program are:

- Approve the Income Tax deductibility for PCs and web services financed under this program.
- Approve a scaled Income Tax exemption of e-commerce generated profits under this program.
- Implement necessary controls to prevent abuse of program by non-beneficiaries.
- Maintain lists of pre-qualified suppliers and service providers under this program.

3.2.2 Other Stakeholders

Under this program, the role of [Internet Service Providers \(ISPs\)](#) is similar to the other programs. Recommended tasks for the ISPs under this program are:

- Qualify for listing with the MoF under this program.
- Introduce special rates for to be bundled with the cost of the replaced PC as requested by beneficiary.

There is a major role for [ICDL Training Providers](#). Recommended tasks under this program are:

- Qualify for listing with the MoF under this program.
- Introduce special ICDL rates for to be bundled with the cost of the replaced PC as requested by beneficiary.
- Introduce flexible training schedules to satisfy the needs of working population.
- Improve training capacity to absorb additional trainees.

3.3 PC Replacement Program

3.3.1 Ministry Of Finance / Sales Tax

The Ministry of Finance / Sales Tax (MoF) is the government entity regulating the imposition, collection and re-imburement of Sales Tax. Recommended tasks for the MoF under this program are:

- Approve the exemption of Sales Tax for PCs financed under this program.
- Implement necessary controls to prevent abuse of program by non-beneficiaries.
- Maintain lists of pre-qualified suppliers and service providers for this program.

3.3.2 Ministry Of Information & Communications Technology

Under this program, The Ministry of Information & Communications Technology (MoICT) is also expected to have an advisory role. Recommended tasks under this program are:

- Pre-qualify PC Importers, Assemblers and Refurbishers for this program.
- Pre-qualify ISPs for this program.
- Set PC specifications and configurations guidelines both for new PCs to be imported and the old PCs to be refurbished.

3.3.4 Other Stakeholders

The implementation of this particular program is not time related and is not expected to place additional financial burdens on [PC importers, assemblers and refurbishers](#). Recommended tasks for PC assemblers and refurbishers under this program are:

- Qualify for listing with the MoF under this program.
- Agree on the preset specifications and configurations guidelines as set by the MoICT for this program.
- Supply the standard suite of Microsoft Office applications at preferential rates specific to this program.
- Ensure an adequate supply of PC parts and components to satisfy demand.

Under this program, the role of [Internet Service Providers \(ISPs\)](#) is similar to the other programs. Recommended tasks for the ISPs under this program are:

- Qualify for listing with the MoF under this program.
- Introduce special rates for to be bundled with the cost of the replaced PC if requested by beneficiary.

3.4 Pensioners' Program

3.4.1 Ministry Of Finance / Sales Tax

The Ministry of Finance / Sales Tax (MoF) is the government entity regulating the imposition, collection and re-imburement of Sales Tax. Recommended tasks for the MoF under this program are:

- Approve the exemption of Sales Tax for PCs financed under this program.
- Implement necessary controls to prevent abuse of program by non-beneficiaries.
- Maintain lists of pre-qualified suppliers and service providers for this program.

3.4.2 The Social Security Corporation

The Social Security Corporation (SSC) maintains databases of pensioners in the country, which makes it the natural choice of champion for this program. A dual role of approving as well as financing PC purchased under this program can be easily fulfilled. Recommended tasks for the SSC under this program are:

- Approve pensioners' applications under the program.
- Implement necessary controls to prevent abuse of program by non-beneficiaries.
- Maintain lists of pre-qualified suppliers and service providers for this program.
- Finance PC purchases using SSC funds.