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IDENTIFY DETAILED REQUIREMENTS FOR TRANSPORTATION INFRASTRUCTURE IN THE BPO ZONES

February 15, 2010

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IDENTIFY DETAILED REQUIREMENTS FOR TRANSPORTATION INFRASTRUCTURE IN THE BPO ZONES

USAID JORDAN ECONOMIC DEVELOPMENT PROGRAM

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EXECUTIVE SUMMARY

A transportation preliminary study for Irbid Development Area (IDA) has been developed considering the current demand issues of two Business Process Outsourcing (BPO) companies, namely CrystelCall and Extensya. The demographics of Irbid and the Northern Governorates was also evaluated in addition to the current transportation modalities and an operational model was concluded. The operational model benefits from the availability of Irbid to IDA and Amman to IDA public transportation as a primary modality in addition to the necessity of providing additional transportation through either ownership or subcontracting. In all cases, a financial model was developed taking the current realities into consideration and the outcome proved to be more economical than what companies are currently paying their employees as a stipend for transportation, in addition to the added benefit of IDA offering a service to its companies to entice them to invest in IDA.

INTRODUCTION

Irbid Development Area (IDA), a part of the Northern Development Corporation (NDC) is adjacent to the Jordan University of Science and technology (JUST) which encompasses the King Abdullah University Hospital, which serves the one million inhabitants and its surroundings. The 3.2sqm development area (located 20 kilometer east of Irbid city and 80 km north of Amman is earmarked for IT outsourcing, healthcare, professional services, middle and back offices and research and development.

IDA was established to utilize the existing pool of resources in the area, benefit from the legal and regulatory framework underpinned by the development areas law, harness Jordan's galloping IT and healthcare sectors and reinvent a modern lifestyle to Irbid's 50,000 students and one million residents. IDA has started attracting Business Process Outsourcing (BPO) companies in Jordan and as part of its vision, IDA will host community services, amenities and housing.

As a fundamental requirement for investment and operation, transportation of employees is at the cornerstone of needs for companies in any Zone in Jordan. This has proven to be a point of contention as Public Transportation in Jordan is still under development and does not offer the viability and flexibility for the transportation of employees. To that effect, numerous companies have opted to invest in their own transportation fleet to serve its needs in the absence of national transportation modalities that offer reliable and safe transportation, especially for companies that need a 24/7 service. Such a service is expected to be the norm in IDA as most BPO companies have to accommodate the operational times of their clients who very well may be located on the other side of the world on a very different time zone.

This study has been developed by support of USAID to IDA and as identified by IDA leadership, transportation is an issue that is needed to be studied. This report looks at the possibilities of transportation modalities to IDA and develops recommendations based on the study. The report is broken into 5 sections, looking at demand, supply, operational possibilities, financial ramifications and recommendations.

DEMAND CONDITIONS

As of the time of this study, two BPO companies have been identified as tenants at IDA. The first is **CrystelCall**, which operates a Call center in Amman serving the region and the second is **Extensya** which is a more elaborate BPO center offering professional services to the region and North America.

CrystelCall has around 70 employees broken into three main shifts as follows:

<u>Shift A</u>	<u>Shift B</u>	<u>Shift C</u>
8:00 to 17:00	17:00 to 1:00	23:00 to 8:00
25	40	5

Table "1": CrystelCall staff and main shifts in the Amman Office

Moreover in an interview¹, executives stressed that they have 27 shifts in the Amman office and not just the main three, but this is a matter of availability of the people and can change accordingly to employee schedules. Also most employees are fresh graduates and supplied by the Business Development Center (BDC). The company also offers 50 JD transportation allowance only for shift "B" employees and will be targeting students from Irbid Universities. Moreover, employee turnover is very high at 5-10 employees a month. Finally, current employees are mainly from Amman (60), Zarka (7) and Irbid (3).

On the other hand, Extensya, presented a totally different story and confirmed the following²:

- Employees in Amman are over 100
- Irbid is still under study
- As a start, maybe 10 employees who are from Irbid COULD be relocated to Irbid
- The number of employees depends on new business that COULD come with a potential maximum of 100
- They have no idea about how many and what shift times are expected as they work according to time schedules.
- They will be targeting Irbid students and residents.

The following conclusion can be developed from the above two companies:

- The expected number of employees at IDA cannot be determined accurately from the above two companies as it varies from a possible 20 to over 200.
- The need for flexibility is very important and transportation will have to operate on a 24/7 basis.
- Irbid residents and Irbid Universities students will be a prime target.

¹ Interview 17 November 2009, with the COO and Commercial Director

² Interview November 2009, with HR director

NORTHERN JORDAN DEMOGRAPHICS

In understanding the potential human Resources supply to IDA, it stands to reason that the Northern Governorates are targeted. This in essence means, Irbid, Ajloun, Jerash, Balqa and Mafrq. However, Amman and Zarqa are also major suppliers, which could be taken into consideration.

In terms of supply, the following statistics are worth noting:

Statistic³	Irbid	Ajloun	Jerash	Mafrq	Balqa
Population	997,000	129,000	168,000	263,000	375,000
% Urban Population	83%	76%	63%	39%	72%
% unemployed of the Population	15.6%	18.1%	15.5%	16.9%	14.1%
Diploma & Bachelors % of the Population	15.1%	12.7%	15.7%	10.4%	18.2%

Table 2: demographic statistics

Since English and Computer skills are important, only those with a diploma and a Bachelors degree were considered potential applicants. Accordingly, as a calculation from the above statistics, the following numbers can be used as an indicator of the potential Human resources supply in each of non rural, from the unemployed people in the Governorates.

Statistic	Irbid	Ajloun	Jerash	Mafrq	Balqa
Unemployed Urban population	20,610	2,250	2,575	1,800	6,925
Percentage	60.3%	6.6%	7.5%	5.3%	20.3%

Table 3: HR supply

Just in comparison, the equivalent numbers in Amman and Zarqa are 53,385 and 13,480 respectively. The above data also gives an indication of the viability of Irbid as a Human Resources supplier and hence the potential success of HR extensive services such as call centers and BPO companies.

Accordingly, it is very likely that the main supply of HR will be from Irbid as opposed to other locations with the exception of Amman and to a lesser extent Zarqa and Balqa.

This information should be taken into consideration when looking at a transportation dynamic and the routes that are of importance are accordingly defined as the following:

1. Irbid to JUST / IDA / King Abdullah Hospital (KAH) (JUST, KAH are neighbors to IDA)
2. Ajloun to Irbid / JUST
3. Jerash to Irbid / JUST
4. Mafrq to irbid / JUST
5. Salt to Irbid / JUST
6. Amman to Irbid / JUST

³ Department of Statistics, "Kingdom indices" 2007

This justifies having a transportation dynamic that revolves around Irbid and JUST depending on the supply dynamics of available transportation modalities. Irbid could be viewed as a main Hub with transportation coming to Irbid from the main Governorates and Amman and then proceeding to IDA/JUST/KAH, if a direct route is unavailable.

SUPPLY OPTIONS

In this section, the results of investigating all the possible and relevant options for transportation are presented, taking the above demographics data into consideration. The transportation modalities under investigation herewith are as follows:

1. Public Transportation
2. Private rental companies
3. Transportation fleet ownership

PUBLIC TRANSPORTATION

What is meant by Public Transportation is the use of buses operating on Public Transportation Routes. These buses could be government owned or owned by companies who subcontract the routes from the government in a public tender process. The second modality is the more applicable one⁴ and can operate in a responsible manner following transparent and published frequencies and times on specific routes. The routes in question have been investigated and are operated by the following companies; the Jordan Express Tourist Transportation (JETT), Al-Orouba, Hijazi and Al-Haq.

According to the Public Transportation Regulatory Commission (PTRC), the following lines are operated by the following Companies:

Line	Operating Company	Leaving Hub	Arrival Hub
Amman – Irbid - Yarmouk Univ.	Hijazi	North Hub (Tabarbour)	New Amman Hub (Irbid)
Amman - JUST	Al-Orouba	North Hub (Tabarbour)	JUST
Irbid – JUST	Al-Orouba	Sheikh Khalil (Irbid)	JUST
Irbid - KAH	Al-Haq	New Amman Hub (Irbid)	KAH
Ajloun – JUST	Al-Orouba	Ajloun Hub	JUST
Jerash – JUST	Al-Orouba	Jerash new Hub	JUST
Salt – JUST	Al-Orouba	Salt Hub	JUST
Mafrq – JUST	Al-Orouba	Mafrq Hub	JUST

Table 4: Lines and operating Companies

Moreover, these lines have the following frequencies:

⁴ According to PTRC Director , interview November, 2009

Line	Leaving Hub	Arrival Hub	Going Trips per weekday (hours)	Coming Trips per weekday (Hours)	Going Trips per weekend (hours)	Coming Trips per weekend (Hours)
Amman – Irbid - Yarmouk Univ.	North Hub (Tabarbour)	New Amman Hub (Irbid)	48 06:00–20:30	48 06:00-20:30	12 08:00-20:30	12 08:00-20:30
Amman - JUST	North Hub (Tabarbour)	JUST	18 06:30-12:00	20 12:00-18:10	0	0
Irbid – JUST	Sheikh Khalil (Irbid)	JUST	21 07:00-12:30	21 12:30-18:00	0	0
Irbid - KAH	New Amman Hub (Irbid)	KAH	70 06:00-22:00	70 06:00-22:00	17 06:00-22:00	16 06:00-22:00
Ajloun – JUST	Ajloun Hub	JUST	9 07:00-12:00	9 12:00-17:00	0	0
Jerash – JUST	Jerash new Hub	JUST	9 07:00-12:00	9 12:30-17:00	0	0
Salt – JUST	Salt Hub	JUST	N/A due to low numbers	N/A due to low numbers	0	0
Mafrqa – JUST	Mafrqa Hub	JUST	1 N/A	1 N/A	0	0

Table 5: Lines and frequencies

From the above tables, it is evident that the only supportive Public transportation to the needs of IDA are within the Amman Route to Irbid (New Amman Hub) and then from the same Hub to KAH. Both these lines operate 7 days a week, from 06:00 – 20:30 and 06:00 to 22:00 respectively on weekdays and 08:00 to 20:30 and 06:00 to 22:00 respectively on weekends. The fact that the other Routes are to JUST and since JUST does not operate on Saturday and Sunday (Student weekend) then the lines are not operated during those times. This could be an issue to take up with the operating companies when IDA develops enough employees to support the transportation companies operation on these routes during the weekends.

Accordingly, These big buses operating in conformance with a schedule are the more reliable option. Upon investigation⁵, Amman to JUST transportation costs around 1.7 JD per student per trip from Amman to JUST with packages available for 100 and 200 trips which have been used by students at a reduced rate, thus dropping the price to around 1.53 JD per

⁵ Meeting with AGM, technical affairs, November, 2009,

student per one way trip. Moreover, the trips from the New Amman Hub (Irbid) to KAH and the Sheikh Khalil Hub to JUST cost 0.40-0.45 JD per person per one way trip.

It has to be said that the Public Transportation routes that are subcontracted serve Irbid from Amman, Mafrq, Ajloun and Jerash in a good manner. Moreover, Irbid to JUST or to the King Abdullah Hospital, which are just across from IDA are also well served. The transportation sheets of the main routes operating as Public transport to Irbid and JUST are shown in Appendix 1, and these reflect the actual details of the frequencies on a per time basis. In a meeting with the Public Transportation Regulatory Commission (PTRC) Director, it was pointed out that the routes that are operated by companies in contract with PTRC are an available option and it would be very difficult to establish a new route by the PTRC which is supposed to subcontract Routes for use by the Public and NOT specifically designed to serve a Private Entity, especially if the numbers of people do not justify the route. Moreover, the PTRC Director stressed that the PTRC may not be able to offer the solution and that either owning its own fleet or subcontracting a transportation rental company will prove to be the better, more flexible solution.

The other possibilities are buses operating on routes but are operated by individuals; These litter the landscape with their large number and mainly comprise of buses who carry 23-26 passengers. The problem with these buses is that they are erratic in operation and can be considered a road hazard for IDA companies. Moreover, according to a straw poll of students using the Amman – JUST route, these smaller buses are only used in the odd cases as they do not conform to any schedule nor are they considered dependable on the long run.

One final option that was discussed in general terms was the possibility of using the JUST buses. However, this possibility is directly relevant to the fact that JUST does not operate on weekends and accordingly this would pose a problem. At this time, it was deemed a detail that does not add substantially to the issues and is left to be evaluated at a later stage if needed.

PRIVATE RENTAL COMPANIES

There are numerous private rental companies in Jordan. Two companies were interviewed, the first, Awaser⁶ operates 14 buses of Chinese origin manufactured in 2007 and has a small scale operation, yet at the time of interview, all of its buses were rented out to Hajj trips barring one which was being branded and rented out to Royal Jordanian Airlines. As to cooperation with IDA, the GM stressed that they would be very happy to cooperate and rent them their buses, but would not be able to manage the transportation function for IDA in the case IDA decides to operate its own fleet.

On the other hand in meeting with JETT⁷, who have 65 large (49 passengers) transportation buses and 165 buses for tourism transportation is a Public Shareholding company with a very high credibility rating and experience in transportation to the North and South of the Kingdom. JETT has 60-70 trips from Amman to Irbid on a daily basis using 10 buses. All of the JETT buses are of European origin, mainly Mercedes, and they have been upgrading their buses to ensure a fully modern fleet in operation in the coming 2 years. Moreover, JETT was very happy to cooperate with IDA as a private rental company and when asked if they are willing to Manage buses owned by IDA, the answer was affirmative based on an agreed plan of price and technical issues. It has to be said that JETT have a sizeable bus maintenance facility on the Amman-Zarqa highway and they utilize preventive maintenance techniques to ensure reliability and availability of their buses.

⁶ Interview 17 November 2009, GM at Abu Alanda company Garage

⁷ Interview, AGM, November 2009

TRANSPORTATION FLEET OWNERSHIP

The issue of owning a transportation fleet is a matter that comes to mind when evaluating the needs for IDA transportation. The two main factors are the number of employees using the buses and the fact that transportation is needed on a 24/7 basis.

Moreover, employers such as Extensya and CrystelCall are very aware of the needs of their employees and the associated costs accordingly, they will align their needs with the best possible cost scenarios in transportation. This would mean that the shift times that are not covered by Public transportation will be covered either by a monthly transportation stipend as they are doing currently for specific shifts, (CrystelCall pays 50 JD for shift B employees per month), which would be a logical perception as the highest amount they may be willing to pay for a transportation company to transport their employees. This gives the possibility of own fleet ownership a totally financial fact. Moreover, the fact that Irbid – IDA (Or thereabout) is well covered by Public transportation and hence it only leaves the 22:00 – 06:00 window. This entails that depending on the number of employees working and the shift system they are adhering to which at this time is chaotic, IDA may simply need to operate one 23 passenger bus on a scheduled or as per needed frequency between the Irbid HUBs and IDA. Accordingly, this could be a viable option.

OPERATIONAL POSSIBILITIES

At this time and based on the demand profile, it is difficult to evaluate a serious need for transportation. However, the following facts remain as the key issues that would need to be resolved by IDA or the employing companies within IDA.

1. Public Transportation from Irbid to IDA is available and frequent enough to operate within the 06:00 – 22:00
2. There is a need for 22:00 – 06:00 operation which could be done in one of two ways
 - a. IDA or companies own a bus/buses
 - b. IDA or companies contract a private transportation company.

Moreover, in transportation, the unit of cost is not the seat but rather the bus itself which should be fully utilized for minimum cost per seat. This is an issue in the case that there are not many users of a bus and it has to continuously shuttle between locations. The financial ramifications could be substantial and hence make bus ownership not a viable solution.

FINANCIAL RAMIFICATIONS

As indicated above the two possible options are for IDA to purchase a bus/buses and /or to rent one from the private companies. In all cases the following financial scenario shall be used to evaluate the viability of transportation and hence the model could become the reference from which to budget the cost provided from a private transportation company.

The following assumptions shall be used:

In 2010, the total employees using the IDA buses shall be 100 spread between the 22:00 – 06:00 hours. This in essence reflects a very possible scenario of having over 300 employees at IDA in 2010.

The distance between the “New Amman Hub” in Irbid and IDA is around 14 Km as shown in the figure below.



Figure 1: “New Amman Hub”, Irbid, IDA map

Such a trip at an average speed of 60 Km /hr would take around 14 minutes of driving add to it would be stops on traffic lights and possible congestion, which would raise the time to around 20 minutes and giving some time for people to get on and off the bus so a total trip would take around 30 minutes in total.

This would mean that from 22:00 – 06:00 the bus would need to make 16 trips which translates to be 224 Km per day at 80 Km per 20 Liter of fuel, the bus would need around 60 Liters of Diesel per day and with Diesel at 0.45 JD/liter would translate into 27 JD/day of Fuel which would translate into 8.1 JD per person per month or 0.27 JD per person per trip. The interesting thing is that this 23 passenger bus would be able to carry 23 passengers every 30 minutes, which would reflect a full possibility of carrying 368 people for the night shift which would constitute around 1000 employees at the IDA companies.

The sheets In Appendix 2 reflect a financial model covering 5 years of operation for a single bus. It shows that the numbers are very favorable even at 30 JD per employee per month. The actual cost at the end of the day for the bus including all staff is around 24- 24.5 JD per employee per month taking into consideration around 100 employees for a single bus at the night shift.

CONCLUSIONS AND RECOMMENDATIONS

The transportation issue to IDA using public transportation in addition to either renting or buying a new bus with customs duties has been investigated. The conclusion, is that

1. The public transportation availability and modalities within Irbid and from Amman to Irbid are commendable for IDA and would only leave the night shift (22:00 – 06:00) in need for another modality,
2. The recommended modality would be that IDA purchases the bus and offers the service to its companies at around 30 JD per month per employee, This would be very sufficient to those residing in Irbid and would Brand IDA as a service supplier. It also was reflected that IDA could make some money through its transportation service, especially that companies in Amman are paying their employees 50 JD per month for transportation. One point to consider is that the cost for daytime transportation is around 13.5 JD per month using Public Transportation.
3. Moreover, as a transportation model and taking demographics into consideration, the recommended operational model would be to operate from within Irbid (the New Amman Hub) to IDA.
4. Companies operating within IDA can organize themselves to utilize the large supply of employees from Irbid. The other potential supply areas would be mainly Salt and Amman. However, Irbid has a large enough supply of students and fresh graduates from Yarmouk University, JUST, and the other Universities on the outskirts of Irbid and Jerash.
5. There is no need for IDA to think about establishing a transportation company at the moment. Accordingly, there are no legal issues that need to be taken into consideration as the recommended solution would be similar to any company having their own bus to get employees to/from work and accordingly this activity would not be labeled as Public transportation but rather private transportation.

APPENDICES

APPENDIX 1: TRANSPORTATION ROUTES FROM PTRC OPERATING TO JUST, IRBID, YARMOUK UNIVERSITY AND KING ABDULLAH HOSPITAL.

Source: http://193.188.64.74/gis_frame/Frequency/

ترددات شركة العروبة على خط (المفرق (المجمع الشمالي) - جامعة العلوم والتكنولوجيا)

بطاقة معلومات الرحلات لأيام الأسبوع عدا يومي الجمعة والسبت/ ذهاباً		
اسم الخط	المفرق (المجمع الشمالي)- جامعة العلوم والتكنولوجيا	
مركز الانطلاق	المفرق (المجمع الشمالي)	
مركز الوصول	جامعة العلوم والتكنولوجيا	
عدد المركبات العاملة	٤ حافلة	
عدد الرحلات اليومية	١	
من الساعة	الوقت	
	الى الساعة	
-	رحلة/ (-) دقيقة	
	التردد	

بطاقة معلومات الرحلات لأيام الاسبوع عدا يومي الجمعة والسبت/ ايباأ		
اسم الخط	المفرق (المجمع الشمالي)- جامعة العلوم و التكنولوجيا	
مركز الانطلاق	جامعة العلوم و التكنولوجيا	
مركز الوصول	المفرق (المجمع الشمالي)	
عدد المركبات العاملة	٤ حافلة	
عدد الرحلات اليومية	١	
من الساعة	الوقت	
	الى الساعة	
-	رحلة/ (-) دقيقة	
التردد		

بطاقة معلومات الرحلات يومي الجمعة والسبت		
اسم الخط	المفرق (المجمع الشمالي) - جامعة العلوم والتكنولوجيا	
مركز الانطلاق	المفرق (المجمع الشمالي)	
مركز الوصول	جامعة العلوم والتكنولوجيا	
عدد المركبات العاملة	٤ حافلة	
عدد الرحلات اليومية	لا يوجد رحلات نظراً لعدم دوام الجامعة	
من الساعة	الوقت	
	الى الساعة	
-	-	
رحلة/ (-) دقيقة		
التردد		

ترددات شركة الحق على خط (مستشفى الملك عبدالله المؤسس/مجمع عمان الجديد)

بطاقة معلومات الرحلات لأيام الأسبوع عدا يومي الجمعة والسبت/ ذهابا		
اسم الخط	مستشفى الملك عبدالله المؤسس/مجمع عمان الجديد	
مركز الانطلاق	مجمع عمان الجديد	
مركز الوصول	مستشفى الملك عبدالله المؤسس	
عدد المركبات العاملة	٧	
عدد الرحلات اليومية	٧٠ رحلة	
الوقت	التردد	
	من الساعة	الى الساعة
٦ صباحاً	١٠ صباحاً	رحلة/ (١٠) دقيقة
٢ ظهراً	٦ مساءً	رحلة/ (١٠) دقيقة
١٠ صباحاً	١٢ ظهراً	رحلة/ (١٥) دقيقة
١٢ ظهراً	٢ ظهراً	رحلة/ (٢٠) دقيقة
٦ مساءً	١٠ مساءً	رحلة/ (٣٠) دقيقة

بطاقة معلومات الرحلات لأيام الأسبوع عدا يومي الجمعة والسبت/ايابا		
اسم الخط	مستشفى الملك عبدالله المؤسس/مجمع عمان الجديد	
مركز الانطلاق	مجمع عمان الجديد	
مركز الوصول	مستشفى الملك عبدالله المؤسس	
عدد المركبات العاملة	٧	
عدد الرحلات اليومية	٧٠ رحلة	
الوقت	التردد	
	من الساعة	الى الساعة
٦ صباحاً	١٠ صباحاً	رحلة/ (١٠) دقيقة
٢ ظهراً	٦ مساءً	رحلة/ (١٠) دقيقة
١٠ صباحاً	١٢ ظهراً	رحلة/ (١٥) دقيقة
١٢ ظهراً	٢ ظهراً	رحلة/ (٢٠) دقيقة
٦ مساءً	١٠ مساءً	رحلة/ (٣٠) دقيقة

بطاقة معلومات الرحلات يومي الجمعة والسبت		
اسم الخط	مستشفى الملك عبدالله المؤسس/مجمع عمان الجديد	
مركز الانطلاق	مجمع عمان الجديد	
مركز الوصول	مستشفى الملك عبدالله المؤسس	
عدد المركبات العاملة	حافلة ٢	
عدد الرحلات اليومية	٣٣	
الوقت	التردد	
	من الساعة	الى الساعة
٦ صباحاً	١٠ مساءً	رحلة/ (٣٠) دقيقة

ترددات شركة العروبة على خط (مجمع الشيخ خليل - جامعة العلوم والتكنولوجيا)

بطاقة معلومات الرحلات لأيام الاسبوع عدا يومي الجمعة والسبت/ ذهاباً		
اسم الخط	مجمع الشيخ خليل - جامعة العلوم والتكنولوجيا	
مركز الانطلاق	مجمع الشيخ خليل	
مركز الوصول	جامعة العلوم والتكنولوجيا	
عدد المركبات العاملة	٦ حافلة	
عدد الرحلات اليومية	٢١	
الوقت	التردد	
	من الساعة	الى الساعة
٧:٠٠ صباحاً	٩:٠٠ صباحاً	رحلة/ (١٥) دقيقة
٩:٠٠ صباحاً	١٠:٣٠ صباحاً	رحلة/ (٢٠) دقيقة
١٠:٣٠ صباحاً	١٢:٣٠ ظهراً	رحلة/ (٣٠) دقيقة

بطاقة معلومات الرحلات لأيام الاسبوع عدا يومي الجمعة والسبت/ اياباً		
اسم الخط	مجمع الشيخ خليل - جامعة العلوم والتكنولوجيا	
مركز الانطلاق	جامعة العلوم والتكنولوجيا	
مركز الوصول	مجمع الشيخ خليل	
عدد المركبات العاملة	٦ حافلة	
عدد الرحلات اليومية	٢١	
الوقت	التردد	
	من الساعة	الى الساعة
١٢:٣٠ ظهراً	٢:٣٠ ظهراً	رحلة/ (٣٠) دقيقة
٢:٣٠ ظهراً	٤:٣٠ مساءً	رحلة/ (١٥) دقيقة
٤:٣٠ مساءً	٦:٠٠ مساءً	رحلة/ (٢٠) دقيقة

بطاقة معلومات الرحلات يومي الجمعة والسبت		
اسم الخط	مجمع الشيخ خليل - جامعة العلوم والتكنولوجيا	
مركز الانطلاق	جامعة العلوم والتكنولوجيا	
مركز الوصول	مجمع الشيخ خليل	
عدد المركبات العاملة	٦ حافلة	
عدد الرحلات اليومية	لا يوجد رحلات نظراً لعدم دوام الجامعة	
الوقت	التردد	
	من الساعة	الى الساعة
-	-	رحلة/ (-) دقيقة

ترددات شركة حجازي على خط (عمان - اربد - جامعة اليرموك)

بطاقة معلومات الرحلات لأيام الاسبوع عدا يومي الجمعة والسبت/ ذهاباً		
اسم الخط	عمان - اربد - جامعة اليرموك	
مركز الانطلاق	مجمع عمان الجديد	
مركز الوصول	مجمع الشمال (طبربور)	
عدد المركبات العاملة	٢٨ حافلة	
عدد الرحلات اليومية	٤٨	
الوقت	التردد	
	من الساعة	الى الساعة
٦:٠٠ صباحاً	٨:٠٠ صباحاً	رحلة/ (١٥) دقيقة
٨:٠٠ صباحاً	١٢:٣٠ ظهراً	رحلة/ (٢٠) دقيقة
١:٠٠ مساءً	٤:٠٠ مساءً	رحلة/ (١٥) دقيقة
٤:٢٠ مساءً	٨:٣٠ مساءً	رحلة/ (٢٠) دقيقة

بطاقة معلومات الرحلات لأيام الاسبوع عدا يومي الجمعة والسبت/ اياباً		
اسم الخط	عمان - اربد - جامعة اليرموك	
مركز الانطلاق	مجمع عمان الجديد	
مركز الوصول	مجمع الشمال (طبربور)	
عدد المركبات العاملة	٢٨ حافلة	
عدد الرحلات اليومية	٤٨	
الوقت	التردد	
	من الساعة	الى الساعة
٦:٠٠ صباحاً	٨:٠٠ صباحاً	رحلة/ (١٥) دقيقة
٨:٠٠ صباحاً	١٢:٣٠ ظهراً	رحلة/ (٢٠) دقيقة
١:٠٠ مساءً	٤:٠٠ مساءً	رحلة/ (١٥) دقيقة
٤:٢٠ مساءً	٨:٣٠ مساءً	رحلة/ (٢٠ - ٢٥) دقيقة

ترددات شركة حجازي على خط (عمان - اربد - جامعة اليرموك)

بطاقة معلومات الرحلات يومي الجمعة والسبت		
اسم الخط		عمان - اربد - جامعة اليرموك
مركز الانطلاق		مجمع عمان الجديد
مركز الوصول		مجمع الشمال (طبربور)
عدد المركبات العاملة		١٢ حافلة
عدد الرحلات اليومية		٢٤
الوقت	التردد	
	من الساعة	الى الساعة
	٨:٠٠ صباحاً	٨:٣٠ مساءً
	رحلة (٤٠ دقيقة)	

ترددات شركة العروبة على خط (عمان (مجمع الشمال) – جامعة العلوم والتكنولوجيا)

بطاقة معلومات الرحلات لأيام الاسبوع عدا يومي الجمعة والسبت/ ذهابا		
اسم الخط	عمان (مجمع الشمال) – جامعة العلوم والتكنولوجيا	
مركز الانطلاق	عمان (مجمع الشمال)	
مركز الوصول	جامعة العلوم والتكنولوجيا	
عدد المركبات العاملة	١٤ حافلة	
عدد الرحلات اليومية	١٨	
الوقت	التردد	
	من الساعة	الى الساعة
٦:٣٠ صباحاً	٧:٣٠ صباحاً	رحلة/ (١٠) دقيقة
٧:٣٠ صباحاً	٩:٠٠ صباحاً	رحلة/ (١٥) دقيقة
٩:٠٠ صباحاً	١٢:٢٠ ظهراً	رحلة/ (٣٠) دقيقة

بطاقة معلومات الرحلات لأيام الاسبوع عدا يومي الجمعة والسبت/ اياباً		
اسم الخط	عمان (مجمع الشمال) – جامعة العلوم والتكنولوجيا	
مركز الانطلاق	جامعة العلوم والتكنولوجيا	
مركز الوصول	عمان (مجمع الشمال)	
عدد المركبات العاملة	١٤ حافلة	
عدد الرحلات اليومية	٢٠	
الوقت	التردد	
	من الساعة	الى الساعة
١٢:٠٠ ظهراً	٢:٠٠ ظهراً	رحلة/ (٣٠) دقيقة
٢:٠٠ ظهراً	٣:٠٠ ظهراً	رحلة/ (١٥) دقيقة
٣:٠٠ ظهراً	٤:٣٠ مساءً	رحلة/ (١٠) دقيقة
٤:٣٠ مساءً	٦:١٠ مساءً	رحلة/ (٢٠) دقيقة

بطاقة معلومات الرحلات يومي الجمعة والسبت		
اسم الخط	عمان (مجمع الشمال) – جامعة العلوم والتكنولوجيا	
مركز الانطلاق	عمان (مجمع الشمال)	
مركز الوصول	جامعة العلوم والتكنولوجيا	
عدد المركبات العاملة	١٤ حافلة	
عدد الرحلات اليومية	لا يوجد رحلات نظراً لعدم دوام الجامعة	
الوقت	التردد	
	من الساعة	الى الساعة
-	-	رحلة/ (-) دقيقة

ترددات شركة العروبة على خط (مجمع عجلون - جامعة العلوم والتكنولوجيا)

بطاقة معلومات الرحلات لأيام الاسبوع عدا يومي الجمعة والسبت/ ذهاباً		
اسم الخط	مجمع عجلون - جامعة العلوم والتكنولوجيا	
مركز الانطلاق	جامعة العلوم والتكنولوجيا	
مركز الوصول	مجمع عجلون	
عدد المركبات العاملة	٣ حافلة	
عدد الرحلات اليومية	٩	
الوقت	التردد	
	من الساعة	الى الساعة
٧:٠٠ صباحاً	٩:٠٠ صباحاً	رحلة/ (٢٠) دقيقة
٩:٠٠ صباحاً	١٢:٠٠ صباحاً	رحلة/ (٦٠) دقيقة

بطاقة معلومات الرحلات لأيام الاسبوع عدا يومي الجمعة والسبت/ اياباً		
اسم الخط	مجمع عجلون - جامعة العلوم والتكنولوجيا	
مركز الانطلاق	مجمع عجلون	
مركز الوصول	جامعة العلوم والتكنولوجيا	
عدد المركبات العاملة	٣ حافلة	
عدد الرحلات اليومية	٩	
الوقت	التردد	
	من الساعة	الى الساعة
٢:٠٠ ظهراً	٣:٠٠ ظهراً	رحلة/ (٦٠) دقيقة
٣:٠٠ ظهراً	٥:٠٠ مساءً	رحلة/ (٢٠) دقيقة

بطاقة معلومات الرحلات يومي الجمعة والسبت		
اسم الخط	مجمع عجلون - جامعة العلوم والتكنولوجيا	
مركز الانطلاق	مجمع عجلون	
مركز الوصول	جامعة العلوم والتكنولوجيا	
عدد المركبات العاملة	٣ حافلة	
عدد الرحلات اليومية	لا يوجد رحلات نظراً لعدم دوام الجامعة	
الوقت	التردد	
	من الساعة	الى الساعة
-	-	رحلة/ (-) دقيقة

ترددات شركة العروبة على خط (مجمع جرش - جامعة العلوم والتكنولوجيا)

بطاقة معلومات الرحلات لأيام الاسبوع عدا يومي الجمعة والسبت/ ذهاباً		
اسم الخط	مجمع جرش - جامعة العلوم والتكنولوجيا	
مركز الانطلاق	مجمع جرش	
مركز الوصول	جامعة العلوم والتكنولوجيا	
عدد المركبات العاملة	٤ حافلة	
عدد الرحلات اليومية	٩	
الوقت	التردد	
	من الساعة	الى الساعة
٧:٠٠ صباحاً	٩:٠٠ صباحاً	رحلة/ (٢٠) دقيقة
٩:٠٠ صباحاً	١٢:٠٠ صباحاً	رحلة/ (٦٠) دقيقة

بطاقة معلومات الرحلات لأيام الاسبوع عدا يومي الجمعة والسبت/ اياباً		
اسم الخط	مجمع جرش - جامعة العلوم والتكنولوجيا	
مركز الانطلاق	جامعة العلوم والتكنولوجيا	
مركز الوصول	مجمع جرش	
عدد المركبات العاملة	٤ حافلة	
عدد الرحلات اليومية	٩	
الوقت	التردد	
	من الساعة	الى الساعة
٢:٣٠ ظهراً	٣:٠٠ ظهراً	رحلة/ (٦٠) دقيقة
٣:٠٠ ظهراً	٥:٠٠ مساءً	رحلة/ (٢٠) دقيقة

بطاقة معلومات الرحلات يومي الجمعة والسبت		
اسم الخط	مجمع جرش - جامعة العلوم والتكنولوجيا	
مركز الانطلاق	مجمع جرش	
مركز الوصول	جامعة العلوم والتكنولوجيا	
عدد المركبات العاملة	٤ حافلة	
عدد الرحلات اليومية	لا يوجد رحلات نظراً لعدم دوام الجامعة	
الوقت	التردد	
	من الساعة	الى الساعة
-	-	رحلة/ (-) دقيقة

ترددات شركة العروبة على خط (مجمع السلط - جامعة العلوم والتكنولوجيا)

بطاقة معلومات الرحلات لأيام الاسبوع عدا يومي الجمعة والسبت/ ذهاباً		
اسم الخط	مجمع السلط - جامعة العلوم والتكنولوجيا	
مركز الانطلاق	مجمع السلط	
مركز الوصول	جامعة العلوم والتكنولوجيا	
عدد المركبات العاملة	٤ حافلة	
عدد الرحلات اليومية	لا يوجد رحلات نظراً لعدم وجود العدد المناسب من الركاب	
من الساعة	الوقت	
	الى الساعة	
-	-	
	التردد	رحلة/ (-) دقيقة

بطاقة معلومات الرحلات لأيام الاسبوع عدا يومي الجمعة والسبت/ اياباً		
اسم الخط	مجمع السلط - جامعة العلوم والتكنولوجيا	
مركز الانطلاق	جامعة العلوم والتكنولوجيا	
مركز الوصول	مجمع السلط	
عدد المركبات العاملة	٤ حافلة	
عدد الرحلات اليومية	لا يوجد رحلات نظراً لعدم وجود العدد المناسب من الركاب	
من الساعة	الوقت	
	الى الساعة	
-	-	
	التردد	رحلة/ (-) دقيقة

بطاقة معلومات الرحلات يومي الجمعة والسبت		
اسم الخط	مجمع السلط - جامعة العلوم والتكنولوجيا	
مركز الانطلاق	جامعة العلوم والتكنولوجيا	
مركز الوصول	مجمع السلط	
عدد المركبات العاملة	٤ حافلة	
عدد الرحلات اليومية	لا يوجد رحلات نظراً لعدم دوام الجامعة	
من الساعة	الوقت	
	الى الساعة	
-	-	
	التردد	رحلة/ (-) دقيقة

APPENDIX 2: FINANCIAL MODEL

Source: Structure Consulting, price quote from Bus companies 2009

Financial & profitability ratio

All Values in JD	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Capital investment	35,000	0	0	0	0	0
EBITDA		10,283	12,991	15,919	19,104	22,545
Interest repayment		1,222	851	445	0	0
Loan repayment		3,904	4,274	4,680	0	0
Net cash flow	-35,000	5,158	7,866	10,794	19,104	22,545

Discount rate	13.13%
NPV	6,179 .JD
IRR	19.27%

← Based on the Weighted Average Cost of capital (WACC) for the transportation sector in Jordan and equity/debt ratio for the project

Capital Investment & Depreciation

Valuation of available buses					TOTALS
BUSES	Quantity +extra	Price per bus incl customs (JD)	Price per bus w/o customs (JD)	Total Bus investment	
new					
50 pax	0	110,000		0	35,000
23 pax	1	47,000	35,000	35,000	
old (2 years)					
50 pax	0	66,000		0	0
23 pax	0	28,200		0	
	1				35,000

Annual Depreciation	Annual Depreciation
20%	7,000

Working Capital Calculation	
6 months G&A	2,896
6 months Running Expenses	9,962
TOTAL	12,858

Total Capital Investment in Year 0	47,858
------------------------------------	--------

Depreciation calculation						
	Year 0	year 1	year 2	year 3	year 4	year 5
Capital investment by IDA	35,000	0	0	0	0	0
Capital investment by current companies at IDA		0	0		0	
Total Capital investment	35,000			0		0
Capital investment by new companies	0		0		0	
Original buses+equipment	0	7,000	7,000	7,000	7,000	7,000
new buses	0	0	0	0	0	0
Total depreciation	0	7,000	7,000	7,000	7,000	7,000

Financing Structure

Required Financing	%	Year 1	Year 2	Year 3	Year 4	Year 5
Equity	73%	35,000	0	0	0	0
Loan	27%	12,858	0	0	0	0
Overall Financing Required	100%	47,858	0	0	0	0

Loan Schedule		Year 1	Year 2	Year 3	Year 4	Year 5
Loan amount		12,858	0		0	0
Interest rate	9.5%					
Payback years	3					
payments / year	1					

Loan repayment		1	2	3
Principle		12,858	8,955	4,680
Interest		1,222	851	445
Principle repayment		3,904	4,274	4,680
Outstanding		8,955	4,680	0

General & Admin expenses

G & A Expenses	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Admin staff Salaries	3,800	3,960	4,356	4,792	5,271	21,978
Social security	398	438	479	527	580	2,418
Health Insurance	200	210	221	232	243	1,105
Rent	500	500	500	500	500	2,500
Utilities	240	240	240	240	240	1,200
Telephones	240	240	240	240	240	1,200
Office supplies	240	240	240	240	240	1,200
Printer supplies	100	100	100	100	100	500
Smart Card printer supplies	0	0	0	0	0	0
Marketing expenses	0	0	0	0	0	0
Misc	278	303	334	367	404	1,684
TOTAL	5,792	6,229	6,709	7,237	7,817	33,785

Reference	
Salaries growth	10%
Rent (JD/Year) 10 m2 @ 50 JD/m2	500
Health Insurance growth	5%
Utilities per month (JD)	20
Telephones per month (JD)	20
Office supplies per month (JD)	20
Printer supplies per YEAR (JD)	100
Smart Card supplies per YEAR (JD)	0

Human resources			
Operation Manager	1	300	300
Financial Controller	0	950	0
Technology Officer	0	550	0
Bus Controller	0	900	0
Yard supervisor	0	800	0
Assistants, front desk	0	300	0
Total	1		300

Operational income

Income from employees	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Income from employees	36,000	40,320	45,158	50,577	56,647	228,703
TOTAL	36,000	40,320	45,158	50,577	56,647	228,703

Reference	
Number of employees driven per day	100
JD per employee/month	30.00
JD per employee/year	360.00
Annual growth in price	12%

Running expenses

Running Expenses	Year 1	Year 2	Year 3	Year 4	Year 5	TOTAL
Bus registration and insurance	2,500	2,550	2,601	2,653	2,706	13,010
Driver Salaries	4,800	5,280	5,808	6,389	7,028	29,304
Social security	528	581	639	703	773	3,223
Health Insurance	200	210	221	232	243	1,105
Bus maintenance	1,750	2,275	2,958	3,845	4,998	15,825
Fuel costs	9,198	9,198	9,198	9,198	9,198	45,990
Misc	949	1,006	1,106	1,217	1,339	5,616
TOTAL	19,925	21,100	22,530	24,236	26,285	114,075

Reference	
Bus Registration and insurance (JD/bus/year)	2,500
Registration and insurance growth per year	2%
Driver Salaries (JD/Month)	400
Number of Drivers	1
Salaries growth	10%
Health Insurance growth	5%
Maintenance contract in years	1
Maintenance 1st year (% of capital investment)	5%
maintenance annual growth	30%
Diesel price JD/L	0.450
Days operational per year	365
Kms travelled per year average per bus	81,760
Fuel consumption (Km/20L)	80

Profit and loss statement

All Values in JD	Year 1	Year 2	Year 3	Year 4	Year 5
Income	36,000	40,320	45,158	50,577	56,647
Operational Expenses	19,925	21,100	22,530	24,236	26,285
Gross Operational Profit	16,075	19,220	22,628	26,342	30,362
G & A expenses	5,792	6,229	6,709	7,237	7,817
EBITDA	10,283	12,991	15,919	19,104	22,545
Depreciation	7,000	7,000	7,000	7,000	7,000
Loan interest Charges	1,222	851	445	0	0
Taxable profit	2,062	5,141	8,474	12,104	15,545
Income tax	0	0	0	0	0
Net Profit/Loss	2,062	5,141	8,474	12,104	15,545
Retained earnings	2,062	7,203	15,677	27,781	43,326

Reference	
Income tax rate	0%

Cashflow

All Values in JD	Year 1	Year 2	Year 3	Year 4	Year 5
Internal investment	0	0	0	0	0
EBITDA	10,283	12,991	15,919	19,104	22,545
Interest repayment	1,222	851	445	0	0
Loan repayment	3,904	4,274	4,680	0	0
Net cash flow	5,158	7,866	10,794	19,104	22,545
cumulative cash flow	5,158	13,025	23,819	42,923	65,467

APPENDIX 3:

1- STAKEHOLDER QUESTIONNAIRER

IDA Transportation Questionnaire
(TAO 10/2009)
Demand interview form

Date:		Time:	
Interviewee / Position:		Location:	

1. What is the main service/product of your company?

--

2. What is the employee time schedule

<u>Shift A</u>	<u>Shift B</u>	<u>Shift C</u>

3. Are the times of the shifts fixed?

<u>Yes</u>	<u>No</u>	<u>Possible times</u>
		Shift A:
		Shift B:
		Shift C:

4. How many employees do you have in each shift

<u>Shift A</u>	<u>Shift B</u>	<u>Shift C</u>

5. Where are your employees from (aggregate Residence)

For details, Provide questionnaire, request reply from each employee

6. Is transportation an issue you worry about?

7. What proactive measures are you taking to minimize your transportation costs?

8. What are the possible scenarios that you have/are investigating for transportation?

9. Have you allocated a budget for your transportation needs?

Check if they have a JD/employee/month

10. Other comments

Thank you

Structure Consulting
Funded by SABEQ

2- EMPLOYEE TRASPORTAION QUESTIONNAIRE

Employee Transportation Questionnaire / إستبيان مواصلات الموظفين / To be completed and filled by employees / يتم تعبئة الإستبيان من قبل الموظفين			
Name			
Sex	Male	Female	
Age		Years	
Job Title			
Working hours / Shift			
Permanent Residence location			

الإسم	
الجنس	ذكر
العمر	سنة
المسمى الوظيفي	
ساعات الدوام / الوردية	
مقر الإقامة الدائم	

What means of transportation do you use to commute			
Public Transportation	Private Bus companies	Own Car / Carpool	Company Bus
Do you commute from your permanent Residence?		Daily	Weekly
If you commute weekly where do you stay during the week?			
Rented apartment	Staff Housing	Hotel	Other

ما هي وسائل المواصلات المستخدمة للقدوم إلى العمل			
النقل العام	باصات النقل الخاص	سيارة خاصة	باص الشركة
هل تستخدم المواصلات بين مقر إقامتك الدائم ومكان عملك؟		يومية	أسبوعياً
إذا كنت تستخدم المواصلات أسبوعياً، أين تقبض خلال أسبوع العمل؟			
شقة مستأجرة	سكن الموظفين	فندق	غير ذلك

Average Journey Time from Permanent Residence to work	
What is the average cost of transportation	JD/Month

ما هو معدل مدة الرحلة من مقر الإقامة الدائم إلى مقر العمل	
ما هو معدل تكلفة المواصلات الشهري	دينار / الشهر

If you use Public Transportation, Please specify the Public Transportation Line names	
Line 1:	
Line 2:	
Line 3:	
How long does it take from your house to the first bus stop	
What is the name of the first bus stop pick up location	

إذا كنت تستخدم المواصلات العامة (النقل العام) يرجى تحديد أسماء خطوط النقل العام المستخدمة	
الخط الأول:	
الخط الثاني:	
الخط الثالث:	
ما هو الزمن المستغرق للتنقل من مقر الإقامة إلى موقف الباص الأول	
ما إسم موقف الباص الأول	

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