Construction and Related Engineering Services Sector and Architectural & Related Engineering Services Sub Sector

Trade In Services Benchmarking Study
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List of Acronyms

A/E  Architectural/Engineering Services
ACEC American Council of Engineering Companies
ACES Arab Center for Engineering Studies
AIA American Institute of Architects
ASTM American Society of Testing and Materials
BIM Building Information Modeling
BPWA Business and Professional Women -Amman
CAD Computer Aided Design
CPC Central Product Classification
EOC Engineering Offices Commission
FDI Foreign Direct Investment
FIDIC International Federation of Consulting Engineers
GAM Greater Amman Municipality
GATS General Agreement on Trade in Services
GCC Gulf Cooperation Council
GDP Gross Domestic Product
GIS Geographic Information Systems
HDMU High Density Multi-Use
HVAC Heating Ventilation and Air Conditioning
IPD Integrated Project Delivery
ISIC International Standard Industrial Classification
JAF Jordanian Armed Forces
JCCA Jordanian Construction Contractors Association
JECA Jordan Engineers Association
JV2020 Jordan Vision 2020
KPI Key Performance Indicator
MENA Middle East North Africa
NGO Non-Governmental Organization
OECD Organization for Economic Cooperation and Development
PE Professional Engineer
PPP Public Private Partnership
QBS Qualifications-Based Selection
R&D Research and Development
RSS Royal Scientific Society
SWOT Strengths, Weaknesses, Opportunities, Threats
UAE United Arab Emirates
USPTO United States Patent and Trademark Office
VTC Vocational Training Corporation
WTO World Trade Organization
1.0 Research

1.1 Previous research

The Jordanian Architecture / Engineering Services Sub Sector was recently studied as part of the services that are expected to add value to the Jordanian GDP included in the Jordan Vision 2020 (JV2020) document. The sector was also reviewed under the 2005 Assessment of Trade in Services of Jordan study conducted by the Ministry of Industry and Trade (MIT) and UNCTAD.

1.2 Current research

Architecture / Engineering Services sub-sector and Construction sub-sector fall within the same services cluster but are organized and managed differently in Jordan. Architecture /Engineering services are organized and regulated by the Jordan Engineers Association (JEA) through its regulations and those of the Engineering Offices Commission (EOC) under the JEA. Construction contractors are organized and managed by the Jordanian Construction Contractors Association (JCCA). Both services are further regulated by the Ministry of Public Works and Housing through qualification and classification for competing in executing Government projects.

Architectural and engineering services that were studied refer to those classified under the United Nations’ Central Product Classification\(^1\)\(^2\) as follows:

**Architectural / Engineering Services**

I. 8671 - Architectural services
   - 86711 - Advisory and pre-design architectural services
   - 86712 - Architectural design services
   - 86713 - Contract administration services
   - 86714 - Combined architectural design and contract administration services
   - 86719 - Other architectural services

II. 8672 - Engineering services
   - 86721 - Advisory and consultative engineering services
   - 86722 - Engineering design services for the construction of foundations and building structures
   - 86723 - Engineering design services for mechanical and electrical installations for buildings
   - 86724 - Engineering design services for the construction of civil engineering works
   - 86725 - Engineering design services for industrial processes and production
   - 86726 - Engineering design services n.e.c.
   - 86727 - Other engineering services during the construction and installation phase
   - 86729 - Other engineering services

III. 8673 - Integrated engineering services

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\(^1\) http://unstats.un.org/unsd/cr/registry/regcs.asp?Cl=9&Lg=1&Co=867
\(^2\) http://unstats.un.org/unsd/cr/registry/regcs.asp?Cl=9&Lg=1&Co=51
• 86731 - Integrated engineering services for transportation infrastructure turnkey projects
• 86732 - Integrated engineering and project management services for water supply and sanitation works turnkey projects
• 86733 - Integrated engineering services for the construction of manufacturing turnkey projects
• 86739 – Integrated engineering services for other turnkey projects

IV. 8674 - Urban planning and landscape architectural services
• 86741 - Urban planning services
• 86742 - Landscape architectural services

Construction

I. General construction work for buildings
• 512 - Construction work for buildings

II. General construction work for civil engineering
• 513 - Construction work for civil engineering

III. Installation and Assembly Work
• 514 - Assembly and erection of prefabricated
• 516 - Installation work

IV. Building completion and finishing work
• 517 - Building completion and finishing work

V. Other
• 511 - Pre-erection work at construction sites
• 515 - Special trade construction work
• 518 - Renting services related to equipment for construction or demolition of buildings or civil engineering works, with operator

The research methodology used in this study included the following:

• General desk research that studied previous research (referenced in footnotes throughout the report), National documents (National Agenda, Department of Statistics), NGO studies (JV2020), annual reports (JEA, JCCA), financial projections (Private sector firms) and Websites to increase the knowledge base
• Specific legal research to identify the laws, regulations and instructions that govern the sector (JEA laws and regulations, JCCA laws and regulations, Ministry of Public Works laws and regulations, Government Tenders Department regulations and instruction)
• Specific research on the UN CPC and ISIC in addition to the modes of supply as per GATS.
• Focus groups from the A/E Business Council staff and management and the JCCA staff and management
• Face to face interviews with A/E and construction firm managers and leading engineers
• Questionnaire sent to A/E and construction contracting firms to better understand competition and competitiveness issues.

The research faced numerous problems in data gathering, including the lack of reply from many A/E and construction firms for which continuous follow-up was needed and eventually, in some cases, repeated telephone calls to get the information in very concise form. The justification from firms was to their delay in replying was that they were all suffering from the current global financial crisis, projects were being cancelled and they were trying to find work and did not have time for anything else.

2.0 Sector Analysis

2.1 Sector Context

A/E Services

The Engineering and Architecture Consultancy Services (A/E services) sub sector is one of Jordan’s foremost service industries. In addition to being a sub sector that is intrinsically creative and innovative, it is key to the country’s drive to modernize and embrace the dynamic, knowledge and skill-based economy of the 21st century. Accordingly, was recognized in 2004 as one of the 10 most important national sectors to drive growth towards a knowledge-based economy by the Jordan Vision 2020 Initiative (JV2020)\(^3\). The sub sector exhibits the following characteristics:

- In 2007, the number of A/E offices in Jordan is 1,200+ employing around 6200 engineers.\(^4\)
- There is a high level of competition in the local market.
- Local competition is price driven.
- Continuous increase in supply of A/E services is surpassing demand in the local market.
- Foreign competition is very low locally and extremely fierce internationally.
- The top Jordanian firms offer a highly competitive product on an international level in terms of both quality and cost effectiveness.
- Due to low revenues and profit margins in the sub sector, firms that predominantly work in the local market do not spend on R&D. However the top companies rely on exporting their services and work on innovative projects within the local market do benefit from R & D activities on an individual basis.
- The regulations regarding engineers and architects specify that they must be registered in the JEA, and engineering offices who want to undertake government projects have to be qualified by the Ministry of Public Works and Housing.

In Jordan, Arab nationals and foreign engineers have also to be registered with the JEA if they want to work in the sector. This is directly stipulated in the JEA regulations and is

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\(^3\) JV2020 Phase 2 document, 2005
\(^4\) 2007 Annual report Jordan Engineers Association (JEA)
detailed in the legislative section of this report. To that effect, the following table reflects the number of registered engineers in 2007.

<table>
<thead>
<tr>
<th>Section</th>
<th>Nationality</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jordanian</td>
<td>Arab</td>
<td>Foreign</td>
<td>Total</td>
</tr>
<tr>
<td>Civil</td>
<td>19071</td>
<td>849</td>
<td>203</td>
<td>21123</td>
</tr>
<tr>
<td>Architecture</td>
<td>5432</td>
<td>469</td>
<td>49</td>
<td>5950</td>
</tr>
<tr>
<td>Electrical</td>
<td>23762</td>
<td>506</td>
<td>31</td>
<td>24299</td>
</tr>
<tr>
<td>Mechanical</td>
<td>14368</td>
<td>317</td>
<td>45</td>
<td>14730</td>
</tr>
</tbody>
</table>

Source: (2007 JEA annual report)

Additionally, the JEA classifies A/E offices/firms into four categories as follows.

**Engineer Offices**

This office is established and owned by a single Jordanian engineer with not less than three years of experience who has to be fully dedicated to working only in her/his office. She/he is allowed to employ engineers as needed as long as they are specialized in the same field as s/he is.

S/he is allowed to work in only **one** field in the following A/E services

- Architecture
- Structural Engineering
- Bridges engineering
- Heating Ventilation and Air Conditioning (HVAC)
- Buildings wiring and electrical installation
- Electronics
- Surveying

These fields are translated to the following modes as per the CPC used in this study:

- 8671 – Architectural services
- 8672 – Engineering services

An engineering office is qualified as an “A”, “B” or “C” office, with the “A” category being the most prominent based on the number of years of experience of the owner-engineer with stipulations to the size of the office in square meters to accommodate the anticipated volume and level of work. Furthermore, such an office can cooperate with other offices to complement the services presented as needed by the undertaken projects.

According to the Companies law, the office has to be registered as a sole proprietorship with the commercial registrar at the Ministry of Industry & Trade according to the commercial registrar bylaw.

**Engineering Office/Firm**

Such an office/firm has to be registered with the JEA by at least 2 Jordanian engineers with a minimum of 7 years of individual experience, two of which, as a minimum, has been spent in design. Both engineers have to be fully dedicated to working full-time in the firm. The firm can work in the following fields:

---

5 Articles 16 – 30 of the Engineering Offices Commission (EOC) regulation (JEA)
These firms are further qualified as “First Grade” and “Second Grade” depending on the level of experience and number of staff. “First Grade” firms have to have at least 2 qualified engineers both with a minimum of 7 years of experience in each field of specialization assisted by at least 4 engineers in the firm. “Second Grade” firms need to have at least one engineer with 7 years of experience assisted by another engineer with a minimum of 3 years of experience in the same specialization making the minimum number of employees in the firm 3. Furthermore, such an office/firm can cooperate with other offices/firms to complement the services presented as needed by the undertaken projects.

This firm has to be registered in the Ministry of Industry & Trade and can take the form of either a private partnership or a limited liability partnership. Finally, the firm has to have sufficient and acceptable offices and utilities with a minimum of 40 square meters for the first 2 engineers and additional 10 square meters for every engineer hired.

**Consultant Engineering Office/firm**

Such an office/firm has to be registered with the JEA by at least 2 Jordanian engineers with a minimum of 11 years of individual experience four years of which, as a minimum, were spent in design and the firm has to work on at least two specializations. Furthermore, both engineers have to be fully dedicated to working full-time in the firm. The firm can work in the following fields:

- 8671 – Architectural services
- 8672 – Engineering services
- 8673 – Integrated engineering services
- 8674 – Urban Planning and landscape architectural services

These firms are further qualified depending on the number of specializations in which they work. The table below reflects the number of years and the number of people to enable the firm to work according to the JEA regulation stipulations.

<table>
<thead>
<tr>
<th>Number of specializations</th>
<th>Engineers with 11 years of experience</th>
<th>Engineers with 3 years of experience</th>
<th>Engineers with less years of experience</th>
<th>Total number of engineers</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>More than 4</td>
<td>Same as 4 above plus 2 engineers for every specialization one of whom should have 11+ years of experience</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: (EOC/JEA Regulations (footnote 8))
Furthermore, such an office/firm can cooperate with other offices/firms to complement the services presented as needed by the undertaken projects.

This firm has to be registered in the Ministry of Industry & Trade and can take the form of either private partnership or limited liability partnership.

Additionally, the firm has to have sufficient and acceptable offices and utilities with a minimum of 110 square meters for the first 2 specializations and additional 30 square meters for every specialization undertaken. Finally, the firm has to employ at least 2 administration officers and to have a minimum of 3 technical staff including draftsmen and quantity surveyors and increase 1 technical staff member for every specialization after the first two.

**Expert Engineer Office**

Such an office has to be manned by an engineer with 15+ years of practical experience after obtaining her/his Bachelor’s degree, 8 years of which are in the expert area applied for or by an engineer with 10 years of practical experience, a post Master’s/PhD degree, and graduation in a specific area of expertise with not less than 5 years working in that expert field. The expert engineer should have demonstrated a lifetime of achievement and level headedness that will be evaluated by the JEA to ensure acceptability to this high level of acknowledgment by the JEA.

The above classification applies to all firms operating in Jordan. The numbers for 2007 are further detailed as follows:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Number of offices/firms</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineer Office</td>
<td>596</td>
<td>49.4%</td>
</tr>
<tr>
<td>Engineering Office/Firm</td>
<td>357</td>
<td>29.6%</td>
</tr>
<tr>
<td>Consultant Engineering office/Firm</td>
<td>246</td>
<td>20.4%</td>
</tr>
<tr>
<td>Expert Engineer Office</td>
<td>7</td>
<td>0.6%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>1206</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

Source: (JEA)

It is evident from the above table that nearly 50% of the offices/firms are individual A/E offices. This sector characteristic has always played a major role to both the capacity of the sector and its competitiveness; both issues will be discussed in the relevant section in this study.

By analyzing the historical data for the A/E sector, many indicators can be deducted. Accordingly, the main indicators of growth in the sector are reflected in Table 4 below.

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6 2007 Jordan Engineers Association Annual Report
Table 4: A/E Service Sector: Main Indicators

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of offices/firms</td>
<td>1068</td>
<td>1045</td>
<td>1075</td>
<td>1106</td>
<td>1061</td>
<td>1112</td>
<td>1178</td>
<td>1206</td>
<td>1226</td>
</tr>
<tr>
<td>Growth in number of offices/firms</td>
<td>-1.2%</td>
<td>-2.2%</td>
<td>2.9%</td>
<td>2.9%</td>
<td>-4%</td>
<td>4.8%</td>
<td>5.9%</td>
<td>2.4%</td>
<td>1.7%</td>
</tr>
<tr>
<td>Employment</td>
<td>4450</td>
<td>4600</td>
<td>4900</td>
<td>5168</td>
<td>5354</td>
<td>5671</td>
<td>6130</td>
<td>6178</td>
<td>6142</td>
</tr>
<tr>
<td>Employment Growth</td>
<td>1%</td>
<td>3.4%</td>
<td>6.5%</td>
<td>5.5%</td>
<td>3.6%</td>
<td>5.9%</td>
<td>8.1%</td>
<td>0.8%</td>
<td>-0.6%</td>
</tr>
<tr>
<td>Work Volume (in million m$^2$)</td>
<td>5.45</td>
<td>6.75</td>
<td>7.45</td>
<td>8.1</td>
<td>11.2</td>
<td>15.23</td>
<td>15</td>
<td>15.5</td>
<td>19.9</td>
</tr>
<tr>
<td>Work Volume Growth</td>
<td>4.8%</td>
<td>23.8%</td>
<td>10.4%</td>
<td>8.7%</td>
<td>38%</td>
<td>36%</td>
<td>-1.5%</td>
<td>3.7%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Source: [2007 annual report, Jordan Engineers Association (JEA) and Department of Statistics (DOS) 2007 annual report]

As general indicators for the sector, the above table reflects a continuous sustainable growth in employment directly related to the number of offices with the exception of the year 2008. The years 2005 – 2007 have reflected a clear correlation of sustainable growth due to the following reasons:

- In 2004/2005, as a result of the National Investment Strategy, the Government communicated the coming of a real-estate boom into Jordan from mainly Gulf sources. Hence areas such as Al-Abdali were created to host the huge development which was anticipated at 50 Billion USD over the years 2005-2010.

- Engineering remains a major highly regarded profession in Jordan. Accordingly, from a supply point of view, the sector is continuously supplied with fresh talent that is required to obtain certification from the JEA to work in Jordan, especially in the Construction and A/E Services sub sectors. The number of engineers certified by the JEA are a reflection of this supply growth and is reflected in the table below:

Table 5: Number of Engineers who are Certified by the JEA

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineers</td>
<td>15088</td>
<td>15629</td>
<td>16187</td>
<td>16804</td>
<td>17432</td>
<td>18236</td>
<td>19137</td>
<td>20123</td>
</tr>
<tr>
<td>Architecture</td>
<td>4219</td>
<td>4426</td>
<td>4631</td>
<td>4851</td>
<td>5058</td>
<td>5278</td>
<td>5606</td>
<td>5950</td>
</tr>
<tr>
<td>Mechanical</td>
<td>9705</td>
<td>10188</td>
<td>10760</td>
<td>11431</td>
<td>12155</td>
<td>12927</td>
<td>13787</td>
<td>14730</td>
</tr>
<tr>
<td>Electrical</td>
<td>12887</td>
<td>13721</td>
<td>14828</td>
<td>16199</td>
<td>17715</td>
<td>19769</td>
<td>21877</td>
<td>24299</td>
</tr>
</tbody>
</table>

Source: [2007 Annual Report, Jordan Engineers Association]

As shown in the table above, the number of architects grew at a steady rate of around 4% for the years 2000 – 2005 and then shot up to 6.2% in 2006 and 2007 as a reflection of the anticipated boom in real estate.

- In 2005, 75-80% of A/E services went into residential buildings as opposed to 20-25% into commercial and industrial projects. In 2008, 88% of services went into residential buildings. In 2005, the main driver for services was the influx of Iraqi

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7 Jordan Engineers Association (JEA) November 2008 report. Numbers reflect data up to 30-11-2008
8 Minister of Public Works and Housing in the Local Press November 2005
9 Monthly report, JEA on A/E services September 2005
10 Monthly report, JEA on A/E Services November 2008
nationals into the country, while in 2008 the main driver was the advent of the huge residential building projects of Al-Abdali and other high-rise development areas.

These events reflect on the number of employees in the sector which showed stabilization in 2008 as shown in Table 4 above, because of: 1) development work was given to only the major A/E firms in Jordan, and 2) the dramatic increase in the price of building materials, such as cement and reinforcement steel, which increased from 400 JD/Ton in 2005 to over 1000 JD/ton in 2008 and hence slowed traditional residential investment down for the period. In September 2008, the price of reinforced steel dropped again to the 400 JD/Ton level when the global financial crisis hit and 2009 is considered to be a more favorable year for projects and residential work for those who were not affected by the global crisis.

Moreover, as a result of the global crisis, the banking sector in Jordan tightened credit and stopped providing loans to individuals, which also slowed down the design process dramatically. According to interviews with A/E firms conducted for this study, orders dropped dramatically and firms were asked to stop work until financial issues were resolved by numerous customers.

The heavy involvement of the A/E sub sector in Jordan with development projects that came about in response to the national investment strategy, and its activity initiated under prior relaxed lending conditions for residential projects, has been impeded by the global financial crisis. Activity is expected to resume by the end of the summer of 2009 according to some A/E firm managers.

The sub-sector was included in the Jordan Vision 2020 Phase 2, in which it was identified as a successful sub sector possessing the potential to increase national income through export and excellence. To promote the JV2020 work, the A/E Forum was founded in 2004 as an informal discussion group of leading professional firms in Jordan meeting to exchange views and sector experiences. By invitation, the Forum offered assistance in the framing of the A/E Sector Plan under the Jordan Vision 2020 program. In May 2006 the A/E Forum transformed itself into the A/E Business Council which was established as an operational membership association providing direct professional services and membership benefits.

The A/E Business Council is a very important player in the sector. It is a membership based and offers professional services to architecture and engineering consulting companies based in the Hashemite Kingdom of Jordan. Its principal objectives are to promote quality, excellence and competitiveness standards in the sector and to facilitate trade through best practices both in Jordan and in overseas export markets. The Council is a not-for-profit association and supports its members through networking, consultation with government agencies concerning professional and regulatory issues, information sourcing, business training and education and the promotion of international trading links. The A/E Business Council is supported by and works closely with the Jordan Engineers Association (JEA), and the Engineering Offices Committee (EOC) through continuous dialogue and joint committees.

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11 Face – face meetings with A/E firms December 2008
12 Focus group meeting with A/E Sector Managers
14 www.aeb-council.org
The A/E Business Council members are considered the leading A/E firms in Jordan and include the following:

### Table 6: Members of the A/E Business Council

<table>
<thead>
<tr>
<th>Firm</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amman Consulting Engineering &amp; Planning Office</td>
<td><a href="http://www.acepo.jo">www.acepo.jo</a></td>
</tr>
<tr>
<td>Arab Center for Engineering Studies</td>
<td><a href="http://www.aces-int.com">www.aces-int.com</a></td>
</tr>
<tr>
<td>Arabtech Jardaneh Engineers &amp; Architects</td>
<td><a href="http://www.aj.com.jo">www.aj.com.jo</a></td>
</tr>
<tr>
<td>Associated Consulting Engineers</td>
<td><a href="http://www.ace-int.net">www.ace-int.net</a></td>
</tr>
<tr>
<td>BAHAC Consultant Engineering</td>
<td><a href="http://www.baha-jo.com">www.baha-jo.com</a></td>
</tr>
<tr>
<td>Bitar Consultants Architects &amp; Project Manager</td>
<td><a href="http://www.bitarconsultants.com">www.bitarconsultants.com</a></td>
</tr>
<tr>
<td>Consolidated Consultants Engineering &amp; Environment</td>
<td><a href="http://www.ccjo.com">www.ccjo.com</a></td>
</tr>
<tr>
<td>Dar AL-Omran Planners- Architects- Engineers</td>
<td><a href="http://www.daralomran.com">www.daralomran.com</a></td>
</tr>
<tr>
<td>ECO-Consult Development &amp; Business Consulting</td>
<td><a href="http://www.ecoconsult.jo">www.ecoconsult.jo</a></td>
</tr>
<tr>
<td>Engicon</td>
<td><a href="http://www.engicon.com">www.engicon.com</a></td>
</tr>
<tr>
<td>Faris &amp; Faris architects</td>
<td><a href="http://www.farisandfaris.com">www.farisandfaris.com</a></td>
</tr>
<tr>
<td>Faris Bagaeen Architects</td>
<td><a href="http://www.fb-architects.com">www.fb-architects.com</a></td>
</tr>
<tr>
<td>Maisam Architects &amp; Engineers</td>
<td><a href="http://www.maisam.com.jo">www.maisam.com.jo</a></td>
</tr>
</tbody>
</table>

Source: (www.aeb-council.org)

The Sector includes other prominent players who are not members in the A/E Business Council such as Symbiosis Designs (www.symbiosisdesign.com), the world renowned Sahel AlHiyari and Partners (http://cmes.hmdc.harvard.edu/node/684) and Khammash Architects (www.khammash.com), to name a few.

### 2.1 Construction

The construction sub sector has always been a major economic powerhouse constituting around 15% of the Jordanian Gross Domestic Product (GDP). Currently the sector has contracted projects for the years (2005-2010) valued at JD 36 Billion (50 Billion USD) in addition to local residence and housing projects around JD 1.5 Billion and government projects around JD 350 Million for the same period\(^1\). The construction sub sector has the following characteristics:

- As of end of 2007 there were 1266 companies registered with the JCCA of which just fewer than 60% are located in Amman\(^2\).

- The sector is segregated by capabilities with only 233 companies of the 1266 completing projects in the period from January 2007 to August 2008 in excess of JD 1 Million. The highest value of a Jordanian company was just under 110 Million JD which ranked 2\(^{nd}\) while the first was a foreign company completing projects in excess of JD 147 Million for the same period\(^3\).

- The sector exhibited fluctuation around an average of JD 708,632,750 (709 million JD) between the years 2001 and 2005. In 2006 the current construction

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\(^1\) JCCA annual report, 2007  
\(^2\) ibid  
\(^3\) JCCA data, November 2008
boom started and growth shot up to reach JD 1,636,654,309 (JD 1.64 Billion) and continued to grow in 2007 to reach JD 2.12 Billion. This is a clear indication of the fact that A/E services are the upstream supplier and construction contractors are the downstream suppliers in the overall construction cluster.

Table 7 below shows that the rapid growth occurred in 2006, which is 2 years after the increase that took place in A/E services (see Table 4, Section 2.1.1 above). A/E services increased in 2004 and grew again in 2005 to stabilize during 2006 and 2007. Moreover, Table 7 below shows that the growth in 2006 was not in the number of projects but in the value of these projects which truly reflects a new era in Jordan with a trend toward high rises and high density multi-use buildings and real estate development projects.

<table>
<thead>
<tr>
<th>Year</th>
<th># of projects in Construction sector</th>
<th>Value of projects in construction sector (JD)</th>
<th>Percentage Growth</th>
<th>Average (2001-2005)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>2223</td>
<td>577,106,289</td>
<td>59%</td>
<td>708,632,750</td>
</tr>
<tr>
<td>2002</td>
<td>2678</td>
<td>753,649,738</td>
<td>31%</td>
<td></td>
</tr>
<tr>
<td>2003</td>
<td>2776</td>
<td>662,763,902</td>
<td>-12%</td>
<td></td>
</tr>
<tr>
<td>2004</td>
<td>2115</td>
<td>806,631,376</td>
<td>22%</td>
<td></td>
</tr>
<tr>
<td>2005</td>
<td>2578</td>
<td>743,012,444</td>
<td>-8%</td>
<td></td>
</tr>
<tr>
<td>2006</td>
<td>2526</td>
<td>1,636,654,309</td>
<td>120%</td>
<td></td>
</tr>
<tr>
<td>2007</td>
<td>3106</td>
<td>2,119,100,154</td>
<td>29%</td>
<td></td>
</tr>
</tbody>
</table>

Source: (JCCA)

JCCA has implemented a classification system for construction contracting companies which breaks down companies to five Qualification levels (1 being best) depending on specialization, with level 6 specifically allocated as a general works category for small companies that do odd jobs supportive of the companies represented in the other classifications.

Any one company may have more than one classification and can be qualified accordingly. For example, a building specialized company can be qualified as Level 1 in building construction and Level 2 in steel structures and any other combination the company deems fit. The qualification system is based on the capital of the company, number of technical and administrative staff, the value of machinery available and previous experiences. Accordingly, if all the totals per classification in Table 8 are added the result would be 1807 classifications that 1266 companies are qualified to perform. Moreover 50% of all qualifications fall in levels 4 and 5 which are the lowest qualification levels for construction companies.

This is similar to A/E services where nearly the same percentage covers individual engineer offices. Moreover, 791 qualifications fall in building construction and a total of 877 qualifications cover the “Buildings” specialization. Building construction amounts to nearly 49% of the total, which again, is a very high percentage. Therefore, 50% of contractors are building related and 609 of them or 70% are qualified in levels 4 and 5.

19 www.jcca.org.jo
20 JCCA classification system: Contractors Classification Instructions for the year 2007, based on article 23 of regulation number 71 for the year 1986 and its amendments JCCA 2008
21 JCCA annual report 2007
In short, this reflects that high level/quality contractors; i.e., those in levels 1 and 2, are a minority (145 or 17%) and hence the fact that only a small percentage of the contracting companies take on large projects such as those offered by the real estate boom.

Table 8: Contracting Company Classification

<table>
<thead>
<tr>
<th>Specialization</th>
<th>Classification</th>
<th>Qualification Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Buildings</td>
<td>Building Construction</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Ready mix concrete</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Steel Structures</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Pre Fabricated</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Building maintenance</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Decorations and Furniture</td>
<td>4</td>
</tr>
<tr>
<td>Road</td>
<td>Road construction</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>Asphalt mix</td>
<td>20</td>
</tr>
<tr>
<td></td>
<td>Bridge and intersection concrete</td>
<td>27</td>
</tr>
<tr>
<td></td>
<td>Culverts and Returning walls</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Excavation and mining</td>
<td>29</td>
</tr>
<tr>
<td></td>
<td>Excavation</td>
<td></td>
</tr>
<tr>
<td>Water &amp; Sewage</td>
<td>Water, Sewage</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Water treatment plants</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>Water softening</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Waste water treatment plants</td>
<td>2</td>
</tr>
<tr>
<td>Electro-mechanical</td>
<td>Electromechanical</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>Electromechanical Maintenance</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>Mechanics</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Electrical</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Electronics</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Electromechanical for industrial projects</td>
<td>1</td>
</tr>
<tr>
<td>other works</td>
<td>Communications networks</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Digging water wells</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>General works</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Industrial structure constructions</td>
<td>1</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td>273</td>
</tr>
<tr>
<td>Percentages</td>
<td></td>
<td>15%</td>
</tr>
</tbody>
</table>

Source: (Annual Report, JCCA, 2007)

The sector is highly dependant on labor. According to interviews with major contracting firms in Jordan21, sector growth could have been larger had it not been for the issue of labor and the lack of skilled labor in Jordan. The issue of labor is detrimental to this sector and according to construction firms and the JCCA the need in the years 2005 – 2012 would be in excess of 50,000 laborers who are currently in short supply22.

The availability of Jordanians who are interested in working in the construction sector has always been mediocre. Numerous initiatives by the JCCA, Ministry of Labor, the...

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21 Interview with Sharif Al-Saifi / Masar Contracting (15/1266) and Alaa’ Al-Masri / Mid Contracting (4/1266), July 2008 and May 2007
22 Structure Consulting, Development of a strategic model for labor in the construction sector, 2007
Ministry of Public Works and Housing for enticing Jordanians to work in this sector have all failed. When reasons were investigated, long hours, harsh environment, and low pay in tandem to bad and hostile management have all been cited as the reasons for not working in this sector\textsuperscript{23}.

In 2007 a new strategic model was developed\textsuperscript{24} to harness the attractiveness of the Jordanian Armed Forces (JAF) as a magnet for Jordanian youth. The model was developed in cooperation with JAF, the Ministry of Labor, JCCA, the Vocational Training Cooperation and the private sector, and later endorsed as a Royal initiative, to become the National Employment and Training Company. The company takes Jordanian youth through a military contract to obtain military training, and later, vocational training in the form of on-site training and certification to become qualified skilled laborers working in the field. The company expected to have qualified 5000 youth by the end of 2008 and is working towards qualifying 30,000 youth by 2010\textsuperscript{25}.

Traditionally the main market supplier for construction labor has been Egypt. Most laborers are unskilled with minimal or no education. The following tables 9 & 10 reflect the number foreign workers within the sector. Table 9 below shows the education level of laborers in the construction sector: 82% are illiterate; the next highest percentage is 14% having an intermediate diploma related to the sector\textsuperscript{26}.

<table>
<thead>
<tr>
<th>Educational level</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illiterate</td>
<td>49954</td>
<td>81.78%</td>
</tr>
<tr>
<td>Read and write</td>
<td>1748</td>
<td>2.86%</td>
</tr>
<tr>
<td>Elementary</td>
<td>269</td>
<td>0.44%</td>
</tr>
<tr>
<td>Preparatory</td>
<td>106</td>
<td>0.17%</td>
</tr>
<tr>
<td>Vocational Apprentice</td>
<td>29</td>
<td>0.05%</td>
</tr>
<tr>
<td>Secondary</td>
<td>138</td>
<td>0.23%</td>
</tr>
<tr>
<td>Intermediate Diploma</td>
<td>8493</td>
<td>13.90%</td>
</tr>
<tr>
<td>Bachelor</td>
<td>332</td>
<td>0.54%</td>
</tr>
<tr>
<td>High Diploma</td>
<td>3</td>
<td>0.00%</td>
</tr>
<tr>
<td>Master</td>
<td>10</td>
<td>0.02%</td>
</tr>
<tr>
<td>PH. D</td>
<td>1</td>
<td>0.00%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>61083</td>
<td><strong>100.00%</strong></td>
</tr>
</tbody>
</table>

Source: Ministry of Labor, Annual Report 2007

In Table 10, the breakdown is based on nationality and it is evident that Egyptians, which represent 96% of foreign workers in the sector, are by far the highest percentage followed by Syrians at just over 2.3%.

\textsuperscript{23} Structure Consulting, Development of a strategic model for labor in the construction sector, 2007
\textsuperscript{24} Structure Consulting, Development of a strategic model for labor in the construction sector, 2007
\textsuperscript{25} Structure Consulting, Development of a strategic model for labor in the construction sector, 2007
\textsuperscript{26} Annual report, Ministry of Labor, 2007
Table 10: Distribution of Non-Jordanians Workers holding work permits, in the Construction Sector by Nationality

<table>
<thead>
<tr>
<th>Nationality</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egypt</td>
<td>58836</td>
<td>96.32%</td>
</tr>
<tr>
<td>Syria</td>
<td>1452</td>
<td>2.38%</td>
</tr>
<tr>
<td>Other Arab Countries</td>
<td>87</td>
<td>0.14%</td>
</tr>
<tr>
<td>Iraq</td>
<td>47</td>
<td>0.08%</td>
</tr>
<tr>
<td>Pakistan</td>
<td>28</td>
<td>0.05%</td>
</tr>
<tr>
<td>India</td>
<td>433</td>
<td>0.71%</td>
</tr>
<tr>
<td>Philippine</td>
<td>40</td>
<td>0.07%</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>4</td>
<td>0.01%</td>
</tr>
<tr>
<td>Other Asian Countries</td>
<td>111</td>
<td>0.18%</td>
</tr>
<tr>
<td>European Countries</td>
<td>35</td>
<td>0.06%</td>
</tr>
<tr>
<td>U.S.A</td>
<td>7</td>
<td>0.01%</td>
</tr>
<tr>
<td>Other Countries</td>
<td>3</td>
<td>0.00%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>61083</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Source: Ministry of Labor, Annual Report 2007

Table 11 below shows clearly that at just under 94%, "unskilled and production workers" is the job category primarily covered by foreign labor coming into Jordan. Accordingly, it is evident from Tables 9, 10 & 11 that illiterate Egyptian nationals working as unskilled and production workers are the most dominant players in the sector.

Table 11: Distribution of non-Jordanians Workers Holding work permits, in the Construction Sector by Job Category

<table>
<thead>
<tr>
<th>Job Categories</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professionals and Technicians</td>
<td>268</td>
<td>0.44%</td>
</tr>
<tr>
<td>Senior Management</td>
<td>110</td>
<td>0.18%</td>
</tr>
<tr>
<td>Clerks</td>
<td>4</td>
<td>0.01%</td>
</tr>
<tr>
<td>Sales Workers</td>
<td>6</td>
<td>0.01%</td>
</tr>
<tr>
<td>Services workers</td>
<td>3422</td>
<td>5.60%</td>
</tr>
<tr>
<td>Agricultural workers</td>
<td>48</td>
<td>0.08%</td>
</tr>
<tr>
<td>Un-Skilled and Production workers</td>
<td>57225</td>
<td>93.68%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>61083</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Source: Ministry of Labor, Annual Report 2007

When investigating the reasons why Egyptian nationals were favored by construction companies, those employers surveyed clearly indicated that Egyptians were not favored, nor were they preferred over Jordanians, but that companies had been unable to find Jordanians willing to work long hours with the flexibility and availability of Egyptians. Jordanians, in terms of working in this sector, were labeled as unavailable and when available, their presence is was unreliable. In terms of cost, Egyptian nationals are not inexpensive to hire as the cost of salaries coupled with residency and work permit costs, in addition to medical services in a sector that entails operational hazards, could potentially make them more expensive to hire than Jordanians, who are medically insured and have no residency costs. Foreign labor may get a salary of 200 JD per

27 Interview with Sharif Al-Saili / Masar Contracting (15/1266) and Alaa Al-Masri / Mid Contracting (4/1266), July 2008 and May 2007
month but the actual cost to the company may reach up to 300 JD a month when taking all aspects into consideration as mentioned above.

2.2 Driving forces affecting the sector

2.2.1 Market trends

Engineers and architects occupy an upstream position in the building and construction process. Therefore, demand for A/E services is closely related to that of construction and overall industrial investment, both of which are, in turn, linked to the economic cycle. In fact, demand for these services may be medium-term leading indicators for the construction industry. Accordingly, the main market trends affecting the sector are as follows:

1. Demographics and population growth: Jordan is a young country with a median age of 23.9 years\(^{28}\). New families are continuously being created and hence the need for residences and commercial offices, malls, mosques/churches, hospitals, and industrial establishments remain the main drivers for the sector, especially for the dominant number of “Engineer Offices” and qualification levels 3, 4 and 5 of construction contractors.

2. The influx of Iraqi nationals into Jordan during and at the end of the Iraq War has also been a driving force in two ways; the first being the need for residences and the second the investment of Iraqis in the economy in the form of office and commercial buildings, in addition to some industrial endeavors.

3. The influx of foreign direct investment (FDI) especially from the Gulf States in response to the successful investment promotion strategy in Jordan has had a great affect in driving the sector towards diversification of building typology and increased infrastructural projects hosted by the Ministry of Public works and Housing. Urban planning, high rise buildings, city master planning and new building styles were all needed to quench the appetite of development elevating Amman into a 21\(^{st}\) century metropolis.

4. The celebrity status of some Jordanian A/E offices in the region has also benefited the sector by increasing export of services especially to the Gulf and region. Firms saw an increase in export projects and infrastructure investigation. Accordingly, some firms had increased income from their branches in the Gulf and Arab countries which led them to run workshops for their management on “facing the current challenges and reading the future”\(^{29}\). To ensure they are able to mitigate any bumps that may happen in the global economy.

5. Some architecture firms have indicated that some of their new projects have reflected a trend towards wellness, health and the environment\(^{30}\). This has led these firms to develop new building styles and integrate green building codes in their design. Moreover, these same firms, through the lobbying arm of the A/E Business Council, have been able to push the local agenda towards developing local green building codes with the Ministry of Public Works and Housing; an issue that will result

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\(^{29}\) Structure Consulting, proprietary information from clients

\(^{30}\) Face to face meetings with Mr. Ramiz Ayoub, Partner, Symbiosis Designs Ltd. December 2008
in Jordanian codes built on international best practices to support green building design in Jordan. The work is expected to finish by mid 2009 and until then existing international standards are being used. The market is expected to benefit from such buildings in reduced energy costs, which, for an energy-poor country like Jordan, is of great economic benefit. It is expected that such a trend will find itself not only being used in public buildings but also in individual family residences of those Jordanians who are more aware of the importance of energy saving.

6. The growth of Internet infiltration and increase in speed in Jordan has resulted in the World Wide Web becoming a true research and education tool. Moreover, information technology and computer literacy within the sector is a major strength, which has led some firms to study the benefit of investing in high-end computer software such as Building Information Modeling (BIM) which uses custom libraries to increase productivity in the design process. In addition, some contracting companies have also increased the adoption of project management software and automated costing systems to ensure continuous monitoring of project budgetary requirements.

7. The supply of experienced engineers is a major factor affecting the capacity and capabilities of A/E firms especially those consultant engineering firms who needed skilled and capable engineers to increase their staff in order to fulfill the requirements of the extra projects that they are being offered. This factor has become a major discussion issue among A/E Business Council member firms who are considered among the top firms in Jordan as stipulated by the membership policy of the Council.

Studies have been conducted within the sector to investigate what kind of competitive package, comparable to that of the UAE for example, would be needed to successfully repatriate Jordanians who have been residing in the Gulf Countries.

A/E Services
In a survey of A/E services firms, the following details in innovation and technology use, costing structure and productivity were identified as the key factors that reflect the trends within the sector. Most of these trends were brought about by new FDI projects, which are mostly based on international standards and require high levels of quality, technology and productivity to ensure conformance to stringent project plans, budgets and schedules.

Innovation and technology use
The following changes or new ways were identified by survey respondents as the three most important uses for the development of the subsector.

Architecture and Engineering software solutions
The sector uses Computer Aided Design (CAD) software as a cornerstone in its implementation. CAD is taught at universities in Jordan and is considered a basic design tool. Most notable is the software AutoCAD, a product of the company Autodesk. There exist many software packages that complement and supplement the basic CAD software

31 Structure Consulting, committee meeting on Green Building Codes, Ministry of Public Works and Housing
32 Structure Consulting, Proprietary Client information, September 2008
33 Interview with Mr. Sharif Al-Saifi, Masar Contracting, December 2008
34 Structure Consulting, Proprietary Client information, September 2008
35 Structure Consulting, Sector Survey, December 2008
including 3-D rendering software that shows completed buildings and projects in 3-D modeling that is extensively used in presentation to clients taking them on “walk-through” of the building to see the interior and exterior design.

Sketching software is also used in the preliminary design phase where creativity and conceptual development are more important than actual detailed CAD drawings. Additional software, like the new BIM, has been investigated and is expected to increase productivity especially in the detailing phases of design. Other engineering software products, such as energy load calculation and finite element analysis in structural design, play a very important role in developing clear, sound and safe engineering designs and integrate well with CAD software. This software is continuously under development with each new version offering new innovations.

**Model Making technology – 3 Dimensional printing.**
The need for such technology stems from the fact that designs are becoming more complicated and clients are becoming more demanding in terms of visual presentation of their projects before construction commencement. This innovation identifies possible investment opportunities for entrepreneurs within the sector to support this service which can be outsourced to small specialized firms working on modeling. As to the benefit of the sector, such an innovation will improve the presentation capabilities of the firms and raise them to higher standards considered quality-driven in the industry.

**New Construction Products and Materials.**
The new typologies and international influences entering into Jordanian projects have made it evident that new materials are needed to create more innovative designs. The innovation here is reflected in introducing new materials and mixes of materials that are reflected in the construction of the projects. Such innovations were first introduced a decade ago when commercial building started to be constructed with glass/aluminum facades as opposed to the more tradition stone facades that were the norm in Jordan. Such material use should result in buildings and projects that are more in tune with the more modern global building scene.

It is also important to note that the Greater Amman Municipality has finished developing the “Amman Brand” which reflects the identity of the city. This is a factor that should be taken into consideration in the building designs and material used in the architecture so that the city’s identity is preserved.

**Costing structure**

Market trends have affected the way firms in the sector cost their services. In small scale projects such as a residential building architectural design, structural analysis, electrical and mechanical analysis and modeling of the project can be performed in-house easily. However, the more complicated large scale projects, such as those currently under construction in Jordan, require far more complicated analytical tools than those which are available to architectural firms directly. Outsourcing is required to specialized firms such as electro-mechanical engineering services firms, structural analysis firms, project management firms, supervision firms and quantity surveyors and geographical surveying firms within the sector. Specialized firms operate in Jordan and have a very strong

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reputation in the region. Accordingly, outsourcing results in changes in cost structures and can be reflected in the overall costing of the firm. Some firms prefer to work in this manner and have developed strategic partnerships with such specialized firms and, accordingly, include them in a new cost structure. Such a shift to outsourcing has also allowed firms, especially architectural firms within the sub sector, to concentrate on design and presentation while leaving the more engineering aspects of the field to specialists who can accommodate the more innovative designs that the architecture firms are producing.

Levels of productivity

Productivity in this sub sector is considered a substantial competitive advantage especially when competing on major projects. Hence skills and tools play a major role in increasing productivity. On the other hand, productivity is very much a competitive force that is market driven; this entails that not all projects require high levels of productivity and hence it is expected that only firms that are working on projects requiring high levels of productivity as a competitive advantage will be investing in the tools that will result in increasing productivity levels. It is imperative to point out that the construction sector is infamous for facing problems and communication mishaps that lower productivity levels. Evidence from research and observations indicate that the conceptual models of construction management and the tools it utilizes fail to deliver projects "on-time, at budget, and at desired quality" (Abdelhamid 2004)

Tools are an area that has had numerous developments: BIM is one tool, so is project management software and other software and design and analysis tool that are used to increase and improve productivity. Skills can only be developed through sending human resources to specialized training and in working collectively as teams and learning new skill sets from operational experience. However, the most important area of productivity has to be linked to systems and the integration of tools and skills in their implementation.

This was clearly demonstrated in the 1950's in Japan when Quality Management icons such as Deming, Juran and Feigenbaum developed with Japanese employees and management what now is considered conventional wisdom in quality control, total quality control and management, just in time production, lean manufacturing and the like. A system that is slowly being implemented in Construction and A/E Services is Integrated Project Delivery (IPD), an offshoot of Lean manufacturing. Integrated Project Delivery (IPD) - a registered business mark by Lean Construction Institute with the US PTO - is a delivery system that seeks to align interests, objectives and practices, even in a single business, through a team-based approach. The team primary team members would include the architect, key technical consultants as well as a general contractor and key subcontractors.

IPD was initially a concept developed by Toyota when they noticed that the amount of material, time and resources that they lost in the design to construction phase of their automobiles was almost 50% of their project cost. In essence, Toyota then developed a collaborative team approach right from the initial design meeting. This involved ALL players. From the engineers who were designing the engine, wiring, and computer

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38 http://en.wikipedia.org/wiki/Lean_Construction
systems to the interior designers who were designing the buttons, knobs, dashes, etc. And what they saw was a huge increase in profitability.

This concept then carried over to the construction industry and can be defined as a “way to design production systems to minimize waste of materials, time, and effort in order to generate the maximum possible amount of value” (Koskela et al. 2002). Designing a production system to achieve the stated ends is only possible through the collaboration of all project participants (owner, A/E, construction professionals, facility managers, end-user) at early stages of the project. This goes beyond the contractual arrangement of design/build or constructability reviews where constructors, and sometime facility managers, merely react to designs instead of informing and influencing the design. This is the opposite of 'business as usual' in the construction sector, where people do things on project after project in the same old inefficient ways, forcing each other to give up profits and overhead recovery in order to deliver at what seems the market price. What results is a fight over who keeps any of the meager margins that result from each project, or attempts to recoup ‘negative margins’ through ‘claims’. The last thing that receives time or energy in this desperate, project-by-project gladiatorial battle for survival is consideration of how to reduce underlying costs or improve quality.

Moreover, BIM is the platform that allows this sort of collaboration and delivery method most effectively. Accordingly, levels of productivity in the A/E and construction sectors can realize benefits on their bottom line through the implementation of the IPD system using BIM software as the main tool and by sending their architects and engineers to training for implementation in real life.

2.2.2 Construction

Innovation and technology use

In the region, some Jordanian construction companies have become famous brands in the area of constructing underpasses, tunnels, and concrete bridges. It is customary to see a complex intersection finished in 120 days including an underpass and a bridge. One case in point was the intersection of the previously known Fourth Circle, which was built by a Jordanian firm including the linkage with a suspended bridge being executed by Larson and Tubro of India. The intersection had two sections, one on each end of the suspended bridge, which were finished in 150 days and with an innovation of finishing the tunnel under the affluent area of Abdoun using a locally developed “Mole” machine that finishes full sections of the tunnel in sequence.

These cases were rare and prior to the boom of 2006 there was little need for innovation since the types of projects were similar. However, after the boom, innovation started to take place due to the different needs of the large scale and big projects. Issues like post-tensioning became a necessity and investment in special machinery equipment and tools started to be observed in the market, so much so that a local company brought in a specialized French firm and set up shop in Jordan. This was a very lucrative project for

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40 Discussion with H.E The Lord mayor of the Eastern Province, Saudi Arabia June 2008, Structure Consulting., numerous discussions with regional A/E Consultants in Turkey, Federation of Consultants from Islamic Countries (FCIC) seminar on Governance, 12 November 2007
41 Discussion with site engineers and company owner Engineer Khamis Attieh, July 2006
the company and local construction companies benefited by being able to provide the services needed by the project designer.

Local construction companies have always used computers at work as they are the recipients of the A/E service firms which are highly computer literate. Moreover, as construction is mainly an execution-based industry, adoption of improved computer software and administrative controls has increased with the need for increased “professional” requirements after the boom of 2006. Companies started to better implement project management software to ensure the continuous and real-time follow-up of timelines and budgets in projects. Better Computer Aided Design (CAD) infiltration to staff became necessary as projects became more complicated and required 3-Dimensional follow-up to ensure correct to design execution. Use of the Internet for quick research became more prevalent, especially for companies benefiting from the 2006 boom and use of emails as a preferred communication channel with designers who were not necessarily in Jordan became more prevalent.

Costing structure
The convention before the 2006 boom was that similar projects would cost the same. Accordingly, the need for more sophisticated costing structures was not necessary. After the 2006 boom, projects were not similar nor were they familiar anymore. Accordingly, companies started to invest in costing software that did not only help them cost more accurately but rather provided them with a systematic structure that was based on international best practices for complex projects.

Complicated projects in the Al-Abdali area required that contractors work with external suppliers and equipment lease companies, such as the case with tower cranes which litter Al-Abdali area and are not necessarily owned by the contractors. Accordingly, taking external suppliers into consideration and different work schedules in tandem with tight and accurately monitored construction schedules meant that these new realities were needed to be taken clearly at as early a stage as possible and included in the costing structure. This has benefited the companies working on these projects and has elevated their level of reliability and comfort in dealing with tight schedules and multiple suppliers.

Levels of productivity
In construction, productivity is the measure of output per unit of time per worker. This can only be increased by increasing the operational methodology and/or the machinery used. It is also a function of regulation for the construction industry as materials such as cement need to be given time to dry in a homogeneous way to ensure that the quality of the end product (wall, slab or floor) is conformant to standards.

Jordanian productivity has always been a point of contention because in some cases, such as building a wall out of stone which is a material extensively used in Jordan, productivity rules were such that you only would build three stone widths or 75 cm a day on a vertical wall. In the late 70’s, early 80’s it would take a 700 square meter villa one year to be structurally finished and another year to have the interior finished prior to decorating. Now it is customary to see apartment buildings comprising of 8 apartments and four floors with 500 square meters floor plans finished in 8 months. Both these old

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42 Discussions with local companies in the Al-Abdali area project including, Mid Contracting, and Masar Contracting
43 Discussions with local companies in the Al-Abdali area project including, Mid Contracting, and Masar Contracting
44 Discussion with 2 families who built their houses in 1978-1982
and new buildings are still standing and with acceptable quality finishes. Accordingly, one may argue that levels of productivity have increased but levels of quality decreased. The other issue surrounding productivity is that it is directly linked to the worker. With the majority of workers being illiterate and that they will only execute what they are told to by their supervisors, then the issue of productivity is not one that can be measured easily. In discussion with company engineers, it is evident that using more labor and more equipment into the project is the primary way to ensure that deadlines are met, innovation at that level has yet to prove valuable.

2.2.3 Markets (international / National)

For Jordanian A/E firms, the market is broken into three segments as follows:

- Local projects that do not need international expertise
- Local projects that need international expertise
- International projects

Local projects vary in complication and accordingly are open for competition within the sector. The simpler the project the more price-sensitive it is and hence the more likely it will attract the type and size of firms that are willing to compete on that level. The more complicated projects that do not require international cooperation have been historically the domain of the public sector and accordingly are only open to those companies that are prequalified by the Ministry of Public Works and Housing. These projects also follow government-purchasing stipulations and have historically gone to the lowest bidder creating a price-sensitive competition in the local market.

Once projects require international expertise then project joint venture is the only way means available as stipulated by local regulations. Such projects have become the domain of competition based on qualification and are very much dependant on the level of competition and expertise of the foreign company.

All member firms of the A/E Business Council, which represent the top level companies in Jordan, have had experience in joint venturing with foreign companies. The following list is just an example and is not exhaustive by any means:

- Lord Norman Foster (www.fosterandpartners.com)
- Zaha Hadid Architects (www.zaha-hadid.com)
- Rem Koolhaas (www.oma.eu)
- Dorsch Consult (www.dorsch.de)
- Lahmeyer International (www.lahmeyer.de)
- Arrowstreet Inc. (www.arrowstreet.com)
- Stanley Inc. (www.stanleyassociates.com)
- Dames & Moore Group (www.dames.com)
- Lord and ROM
- Hydea s.r.l (www.hydea.com)
- Sheladia Associates (www.sheladia.com)
- RJKL (www.rjkl.co.uk)

45 This will be covered in the regulations section of this study.
Moreover, partnerships exist between some firms and global players such as Arabtech Jardaneh and Montgomery Watson through the creation of the private limited liability company named “Montgomery Watson Arabtech Jardaneh L.L.C.” which has been managing the water supply network in conjunction with the Jordanian government through a Public Private Partnership (PPT).

On the international scene, Jordanian firms have been exporting their services all over the world. The sub-sector currently exports its services to more than 20 countries including USA, the Gulf Cooperation Council (GCC) countries, North Africa, Sub Sahara Africa, Sudan, Kazakhstan, Georgia, Maldives and the Middle East Levant countries. Europe was identified as a potential export market where concentration on Mode 1 with potential growth towards mode 4 being applicable in the future.

Jordanian firms’ reputation in the region is considered a strength for the sub sector. The A/E Business Council is working on creating linkages and networking on the regional and global scene and has succeeded in becoming a member of the prestigious International Federation of Consulting Engineers (FIDIC) and was able to expose its members to specialized development courses from the world renowned Zweig White Consulting firm. All this effort is aimed at branding Jordan as the A/E Services Excellence hub of the Middle East, and highlighting its quality and well-priced service provision. The A/E services sector does not require physical geographical proximity to be successful. Rather, highlighting the availability of trained and efficient engineers in the country, and promoting Jordan’s reputation for high quality proactive work, is the more successful marketing strategy, which is being pursued by the A/E Business Council.

Prices

National Prices

Design fees in architecture projects have customarily been based on a per square meter rate of design. The Jordan Engineers Association (JEA) identified the minimum acceptable rate at 2.75 JD / square meter. An example is that a building with 1,000 square meters planned would be billed at 7-10 JD per square meter depending on the

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46 The identification of opportunities for Exporting of Jordanian Advisory and pre-Design services and Engineering services to the European Union, Euro Jordanian Export program, July 2005.
47 www.fidic.org
48 http://www.zweigwhite.com
49 http://www.aeb-council.org/UI/English/ShowContent.aspx?ContentId=9&ContentId2=1
50 www.jea.org.jo
complexity and selected firm and hence would cost between 7,000 and 10,000 JD. Historically and with very few exceptions, clients would compare architectural firms on this basis, as issues of identity and style were not that prominent. With the establishment of new firms like Symbiosis Designs, Faris & Faris, Maisam, Sahel Al Hiyari and Ammar Khammash, each with unique design styles, clients started to become more sophisticated and required designs specifically from these and other firms who would reflect a unique identity congruent with that of the client.

Even though competition between those firms was price driven, a more or less median price was accepted by these firms, once again limiting the value of creativity for the client. Currently, some A/E Business Council member firms have adopted better internationally accepted models such as that of Zweig White in developing costing of projects depending on man days, billable hours and efforts, number of sheets of paper produced and typology. This method is being accepted by some clients. However, issues such as payment due dates and payment upon percentage of completion remain controlled by the clients, a practice not favored by A/E firms.

On the lower scale of projects, projects are fully price driven and select the lowest bidder which means that individual engineer offices take the work. This economic and price dynamic has always been accepted as the norm in Jordan and the Engineering Offices Commission (EOC) considers this as a healthy dynamic whereby the market distributes the work among sector firms.

This square meter methodology has also cascaded through the sector to subcontracting specialized firms such as those working in electrical, structural and mechanical engineering services, whereby they would bill based on the size of the building with minimum variations on complexity and typology.

In construction, comparatively speaking local prices are 25% cheaper than in the Gulf, 25% more expensive than Syria and Egypt, and 10% more expensive than Lebanon. The key factor in comparison has always been the cost of labor. However, no measures of productivity have been identified and "monetized". Accordingly, these indicators are more a reflection of cost on a comparative level and not on an absolute where project cost and productivity are compared.

On the other hand, construction projects in the Gulf when compared by non-experts seem to always be far more (greater than 25%) expensive than in Jordan. Suggested reasons for cost differential:

- Standard of quality is higher
- Execution period is shorter
- Conformance to design is better
- International prices are the basis of costing

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51 Structure Consulting, sector survey, December 2008
52 Structure Consulting, Face to face meeting with Maisa Batayneh, Maisam Architects, January 2009
53 Interview with Engineer Rayeq Kamel, Head of the EOC, March 2007
54 Interview with Mr. Ramiz Ayoub, Symbiosis Designs Ltd., May 2008
55 Sector questionnaire, December 2008
International Prices

There are globally accepted models of costing and pricing such as those of Zweig White which is considered international best practice in the sector. The pricing is not correlated to square meter size, but rather on the project itself and its cost in terms of “man-hours” spent on it depending on the actual staff working on the project in addition to operational expenses such as the number of sheets that need to be produced, the level of detailing of the working drawings and the extent to which the office is presenting a full project as opposed to a detailed design.

A full project is one that has a full location and topographic study; conceptual design and justification; detailed design; full electrical, structural and mechanical detailing; the production fully detailed by design drawings; and the preparation of tender documents for the contractor to execute. Moreover, the typology of the project plays a role in the level of the pricing: museums are priced very differently than a personal villa or a highway. Accordingly, pricing depends in large part on typology and is always linked to construction cost. International design fees hover around the 2.5-3.5% of the construction cost. Accordingly a 1,000,000 JD project would have design costs of 25,000 – 35,000 JD for a full design. Moreover, the fees of famous architects such as Rem Koolhaus, Zaha Hadid, Norman Foster and others can reach up to 18% of the construction cost.

Factors of demand and supply

Social / economic factors

Jordan is a predominantly poor country with a GDP per capita hovering around 3500 JD per year. Not being rich in natural resources, Jordanian wealth has had links to education and achievement. Accordingly, Jordan has one of the highest educated populations in the Arab World and with over 70,000 engineers (a percentage of around 1.2% of the population) is a major exporter of its local engineering talent to the region. Accordingly, Jordanian engineers have been present in all the Gulf States since the early 1970s and have been considered a mainstay in the development of the Gulf countries. Jordanian expatriates to the Gulf just under 350,000 people with annual remittances of around 2 Billion JD nearly 15% of GDP (official exchange rate).

In the period from 2006 until the global economic crisis in late 2008, Jordanians were benefiting from the real estate boom through higher prices for the then owners of property. It was common to buy a piece of land for 10,000 JD in 2006 only to sell it for 50,000 JD in 2008. Jordanians also benefited from investment in the stock market which also reflected major gains in prices. During that period blue chip companies reached all time highs only to fall again after September 2008.

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56 Interviews with Mr. Izzat Sajdi, CEC, Ramiz Ayoub, Symbiosis Design and others, A/E Business Council, July, 2008
59 CIA factbook, Jordan, 2009
60 Interviews with Mr. Safwat Karim and Ayman Dweik, Real Estate agents, September 2008
61 www.ase.com.jo (Check stocks JOST, APOT, JOPH, ARBK, JOPT)
Socially, Amman has always been the real hub of Jordan. Any visitor to Jordan would be amazed at the modernity of Amman in relation to the neighboring cities and towns. It is not surprising to see that most engineering offices/firms and development work has been taking place in Amman with around 78% of offices/firms and 64% of the projects concentrated there.\(^{62}\)

Jordanian expatriates have also played a role in increasing local demand. Real estate and land prices have been increasing seasonally in early summer and stabilizing early fall in conjunction with expatriates coming and leaving Jordan for the summer holidays.\(^ {63}\) Iraqis have also played a role and their flow into Jordan resulted in an increased demand on real estate and pressured utilities.\(^ {64}\)

Based on the above, the more economically relaxed situation within the region applied to Jordan and hence the more economically capable population within Amman exhibited higher demand for leisurely occupations and recreational / commercial spaces which lead to higher demand on architectural and building services. Additionally, development, affects the type of services supplied, leading to the emergence of new service typologies. For example, the current demand in the market for large scale development has had a direct impact on the type and scale of services that are supplied, demanding a large supply of AE mergers and coordination which has benefited the sector.\(^ {65}\)

Finally, the market is continuously being supplied with fresh engineers. Barriers to entry are non existent other than the requirements of the JEA/EOC, which are administrative. Accordingly, the market is saturated with an abundance of small offices that have to be price driven. Moreover, the local market is small and is easily affected by events of the regional arena which makes the market somewhat unpredictable both positively and negatively - positively in benefiting from regional mishaps in which Jordan is a safe haven and negatively in diminished investment if the region falls into turmoil and the foreign perceptions hold that Jordan as part of the Middle East is a dangerous place. Accordingly, and as a consequence of the real estate boom, large offices (primarily member firms of the A/E Business Council that are considered quality service providers) started to gain more and more recognition and to sway the market towards high quality service.

In construction, supply and demand factors are always linked to execution costs. Accordingly a project might be fully designed by the A/E firm but when it comes to execution the owner may opt to start construction, or not, depending on cost factors. These factors include raw material prices especially those of reinforced steel and cement. Steel does not constitute more than 8% of building costs; however, prices are continuously contested. The same applies for cement. An owner may desist from building pending the reduction of raw material prices. As for the contractor, deciding to take on a project or not is also subject to supply and demand factors. For the contractors the most notable of these factors are the availability of skilled labor and of bank financing.

\(^ {62}\) JEA Annual report, 2007  
\(^ {63}\) Interview Mr. Safwat Karim and Ayman Dweik, Real Estate agents, September 2008  
\(^ {64}\) Interview Mr. Safwat Karim and Ayman Dweik, Real Estate agents, September 2008  
\(^ {65}\) Interview with A/E Business Council members and Mr. Ramiz Ayoub, Symbiosis Design, December 2008  
\(^ {66}\) Discussion with Jordan Steel PLC Deputy General Manager, May 2004
2.2.4. Investment trends

The construction boom in Jordan was evidenced by or reflected in the areas in square meter designed and submitted for approval to the Jordan Engineers association (JEA). These numbers are a true indication of the growth in new buildings and are a very clear indicator of the health of the Construction sector. As shown in the Table 12 below, a major leap occurred around 2004/2005, which coincides with the success of the National Investment Strategy as mentioned earlier in this study and the creation of high visibility areas such as Al-Abdali and Aqaba.

Table 12: Architectural work volume growth

<table>
<thead>
<tr>
<th>Year</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work Volume (in million m²)</td>
<td>5.45</td>
<td>6.75</td>
<td>7.45</td>
<td>8.1</td>
<td>11.2</td>
<td>15.23</td>
<td>15</td>
<td>15.5</td>
<td>19.9</td>
</tr>
<tr>
<td>Work Volume Growth</td>
<td>4.8%</td>
<td>23.8%</td>
<td>10.4%</td>
<td>8.7%</td>
<td>38%</td>
<td>36%</td>
<td>-1.5%</td>
<td>3.7%</td>
<td>28%</td>
</tr>
</tbody>
</table>

Source: JEA annual report 2007

The main reasons for the boom were identified as the following\(^68\):
- The events of September 11 2001 in the USA resulted in many Arabs relocating their wealth back to the region.
- The increase in oil prices and creation of cash surplus in the Gulf
- Regional Instability in Iraq and Palestine and international censure toward Syria and Iran made investors look for a safe haven for their investments
- The drive by real estate developers to reinvest in the sector
- The availability of a safe and positive investment strategy in Jordan.
- The thousands of Iraqi families who arrived in Jordan
- The modification in the Owners and Tenants Law which allows owners of rental property to evacuate their tenants upon expiration of their long-standing contracts led to an increase in the attractiveness of and a drive towards owning rather than renting property.
- The low interest applied to housing loans from banks also added to the increase.

What is also indicated by Table 12 is that the leap stabilized immediately and resurged again in 2008 as a result of the continuation in the arrival of new investment and the continuation of projects that were delayed from 2006 and 2007 due to financing and marketing dynamics. Moreover, 2008 saw the initiation of design for Phase 2 in areas such as Al-Abdali\(^69\) and the creation of new mega projects for low income housing in the “Aysh Kareem” (Decent Living) initiative launched by His Majesty King Abdullah II, and the King Abdullah bin Abd Al-Aziz city project launched by King Abdullah bin Abd Al-Aziz of Saudi Arabia. Other players in the field were tourism development projects.

\(^67\) Jordan Engineers Association (JEA) November 2008 report. Numbers reflect data up to 30-11-2008
\(^69\) Interview with Mr. Obaida Al-Kurdi, (Kurdi Group Real Estate developers), Bisher Jardaneh, (Arabtech Jardaneh), December 2008.
2.2.5 Implications of these investment trends

The real-estate boom has had major implications on the sector. Accordingly, these implications are viewed from a cluster linkage opportunities context and a value chain context as follows:

**Cluster linkage opportunities**

The A/E sub sector falls within the construction sector and is considered an input or an upstream player with construction contracting companies being the recipients or the downstream players. This is clearly reflected in Figure “1” below.

![Figure 1: the A/E sector cluster Map](image)

Source: JV2020, A/E sector presentation, December 2004

The real cluster linkages in terms of inputs are identified as follows:

- Re-addressing construction methods and building trends which can be accomplished in conjunction with contractors and owners and end users in a manner similar to the IPD system indicated in this study.

- New association opportunities are also available in which small offices/firms can merge or acquire each other towards creating larger firms with more capabilities to tackle major projects. This will result in shifting the sector from the old price-driven mindset to a more capability and quality driven value added services.

- Opportunities for integration between the academic and the investment sectors have become apparent with the shift in new typologies, building material requirements and other construction related issues. The availability of universities that employ qualified professors is an opportunity that can be

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70 Interview with Faris Abdul Rahman, Faris & Faris, December 2008
benefited from through integrating more technically sound research to new methods in the sector.

- Opportunity for integration of the public and private sectors is a major outcome from the real Estate Boom that came to Jordan; the Greater Amman Municipality has identified zones and corridors for development by the private sector, which requires infrastructural and utility development to serve these areas as an example. The development of the Queen Alia International Airport to accommodate more passengers is a direct consequence of the current growth levels that again require Public Private Partnerships.
- Opportunities for upgrading and enhancing local building codes have already commenced with the A/E Business Council and the Ministry of Public Works Committee on the development of green building codes. This opportunity provides an area of great cooperation that will lead to the development of legal and technical relevant legislation.
- Opportunity for re-addressing planning and development restrictions is being tackled by the Greater Amman Municipality and other municipalities and governorates through the development of master plans and land use strategies that will remove many of the previously placed restrictions for planning and development. This is being developed with the private sector in mind and reflects a very transparent methodology whereby the local communities are integrated into the development process.

Value chain context

Value chain is the chain of activities in which products pass through gaining in value as they pass from activity to activity. In the case of the A/E Sector the value chain represents itself in the process from meeting with the client and understanding their needs to developing full tender documents and construction work drawings for the work to be implemented as designed. Accordingly, issues of productivity and quality become the major players in this context. To that effect, the following opportunities have developed:

- The opportunity for implementing integrated solutions that add value to the services of the sector. This entails complete solutions that have been acceptable globally in areas such as “Design – built” projects, which include a single contractor who coordinates with the owner and is responsible for providing a full solution taking design and construction into consideration.
- Multi-disciplinary services including GIS, surveys, geotechnical, mechanical structural, electrical. These can be developed as stand alone companies of excellence which will increase the capacity and capabilities of the sector.

In the case of the construction sub sector, based on the survey results obtained for this study, some contractors have concluded that they have identified the opportunities by investing in the industries that are suppliers for their work. This includes reinforced steel making, rock quarries and stone cutting facilities. Their justification is that they are looking at the overall project cost and accordingly could work as material suppliers and contractors or turnkey project executors where they would be responsible for the overall project.

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71 Different interviews with A/E Business Council member firms, 2008
72 FIDIC manual on Design Built, www.fidic.org
project including material supply. Their assumption is that by controlling the selling price of each part of the value chain they are more likely to benefit as contractors. On the other hand, some real estate developers applied this philosophy and benefited by offering end users better prices by ensuring low profits at each end of the value chain.

73 Discussion with Mr. Obaida Kurdi, Kurdi Group, 2006
2.3 Stakeholders who could be included in the establishment of longer term working groups

The main stakeholders who are directly related to the sector include the following organizations.

The Jordan Engineers Association (JEA)\textsuperscript{74}

JEA organizes and regulates the engineering practice in Jordan. It was established in 1953 and is the organization mandated by law to maintain the Jordanian national register on all operating engineers in Jordan, which includes not only Jordanian engineers, but also non-Jordanian engineers licensed to operate in Jordan. The Association develops programs in engineering education, training, and skill development. It also develops plans and schemes to assist Jordanian engineers in practice development and upgrading through professional career programs offered at or by the JEA. In addition to the association’s law (the JEA Law), the Association’s operational mandate lies on a number of administrative foundations, such as the regulations pertinent to engineering practice and engineering offices, in addition to other regulations on health insurance, pension, and retirement.

The Engineering Offices Committee (EOC) of the JEA\textsuperscript{75}

The EOC was established in 1989 to represent the engineering offices operating in Jordan. And while JEA is responsible for the engineer him/herself, EOC is responsible for the firms and the way they operate. The Committee is mandated by Regulation Number 31 of 1989 of the JEA to monitor and manage the practice of firms in the sector.

The A/E Business Council\textsuperscript{76}

The Council was founded in 2004 as an informal discussion group of leading professional firms in Jordan organized to exchange views and share sector experiences. By invitation, the Council offered assistance in the framing of the A/E Sector Plan under the Jordan Vision 2020 program. From May 2006 the A/E Business Council was established as an operational membership association providing direct professional services and membership benefits to architecture and engineering consulting companies based in Jordan. Its principal objectives are to promote quality, excellence and competitiveness standards in the sector and to facilitate trade through best practices both in Jordan and in overseas export markets. The A/E Business Council is a not-for-profit association that supports its members through networking, consultation with government agencies concerning professional and regulatory issues, information sourcing, business training and education and the promotion of international trading links. The A/E Business Council is supported by and works closely with the Jordan Engineers Association (JEA), and the Engineering Offices Committee (EOC) through continuous dialogue and joint committees.

The Jordanian Construction Contractors Association (JCCA)\textsuperscript{77}

JCCA is the association responsible for the classification of contracting firms. They are the equivalent of the EOC at the JEA.

\textsuperscript{74} www.jea.org.jo
\textsuperscript{75} www.jea.org.jo
\textsuperscript{76} www.aeb-council.org
\textsuperscript{77} www.jcca.org.jo
3.0 General Business Environment

3.1 Brief

The Jordanian economy has undergone substantial changes over the past decade. Successive governments have identified core issues, areas for development and have committed to fundamental reforms; partnership with the private sector has been fostered to eliminate poverty and foster sustainable development. However, in spite of a number of success stories, the reality remains that numerous efforts and millions of dollars have not yet generated the expected results and have not put the country on a stable economic base.

Opportunities and incentives for firms to invest, create jobs and grow depend on expected profits, and profits are influenced by cost, risks and barriers to competition. Investments in particular are attracted by a stable and secure environment and the existence of good governance institutions that reduce uncertainty and risks, promote efficiency and reduce the cost of doing business.  

3.2 General business environment effect on the sector

The business environment has a direct and proportional impact on the sector, and the sector development.

- Issues such as the recent construction boom have positively affected the sector.
- Issues such as the bureaucracy of doing business and the long wait time for stakeholders such as the JEA and the Greater Amman Municipality (GAM) and the Civil Defense and General Municipal Planning Committees to give approval slows down and impedes the sector.
- The current transformation of Amman into a more organized city has been a major factor that frustrates engineering offices in terms of land use and planning regulations, an issue that is hoped to be streamlined by mid 2009.
- Income tax and sales tax levels are still considered high by the local industry, especially as related to A/E services. The system is such that for limited liability and private shareholding A/E companies 2.6% of revenue is taken as income tax irrespective of firm's profitability.
- The dynamic of allocating a maximum square meter capacity for engineering offices as per JEA/EOC regulations has opened the door for much contention between A/E offices/firms and the EOC/JEA. The problem is multi-faceted and reflects itself in social, economic, governance and free market aspects as follows:

Every office registered with the JEA has a profile of the number of employees, draftsmen, engineers, computers, copying machines and other office equipment, experiences, project portfolio, and such. The JEA has stipulated that according to the profile the firm is allocated a quota of a maximum amount of square meters.

79 Article 32/B Income tax law No. 57 for the year 1985
80 Chapter 11, EOC instructions, page 134-140
that you can design. For example, an office with three engineers with an accumulated experience of 20 years, 2 draftsmen, 4 computers, a photocopying machine will be allocated a maximum of 10,000 square meters of architectural design. For that office this amount can be translated into a commercial complex of 8,000 square meters area and 4 Villas of 500 square meters each.

The problem arises from the fact that the business environment has changed especially for the firms that are undertaking large scale projects like those in Al-Abdali area, where one project may easily reach 25,000 plus square meters. Moreover, the system was developed to support the huge number of offices in Jordan as a socio-economic tool and the values were developed when the size and typology of projects were such that the values made sense when comparing real data with the system. The problem is when new development projects came about a new paradigm was defined that is yet to be approached and corrected by the JEA and EOC. The ramification of such a system exhibits itself in two forms as follows:

- Engineer offices and engineering firms who are not completely active gain from the quota by selling it to firms who have exceeded their own quota
- Consultant engineering firms who exceed their quota need to buy quota to remain economically viable in the market as the quota was developed when salaries were a third of what they are in 2008.

Accordingly, this issue needs to be approached with extreme caution as it is expected that around 1000 offices of the 1200+ offices in Jordan benefit from the quota system and the top level consultant engineering firms are at a disadvantage with 100 or so firms in the middle who are not really affected. In essence, the problem leads to possibilities of unfair practices and weak sector governance due to the regulations and instructions of the governing body, the JEA.

For the construction sub-sector, the main factors affecting the business environment are related to the JCCA, the Ministry of Public Works and Housing and the Government Tenders Department. All three are responsible for registration, classification and qualification of companies and accordingly, opening them to tenders for Government projects.

In talking with officials at the Ministry of Public Works and Housing, the sector provided less than expected work quality in the implementation of Government projects, which, according to the classification and qualification system, the government should not accept. The JCCA suffers from an antiquated classification system that does not take into consideration international best practices.

The private sector is affected by the regulatory environment as there is no system for objectively identifying high quality contractors nor is the qualification and classification system of any value for the private sector real estate development companies. In 2007, the JCCA contracted a consulting firm to develop a new classification and qualification system.

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81 Proprietary interviews with A/E sector firms, and individuals with EOC experience, 2009
82 Discussion with GTD staff and Managers in Building and roads departments MPWH, 2007
83 Discussion with the President of JCCA, 2007
system. It has yet to validate the system through implementation. The new system was based on a classification tree that was developed with international best practices and standards taken into consideration and a qualification system that was based on cluster analysis of the sector, which resulted in a computerized methodology that qualifies contractors based on capacity, capability, efficiency and productivity in addition to previous experiences and quality[^34].

### 3.3 Effect on investment

For the A/E sub sector, no restrictions and barriers exist to entry barring the requirements of ownership and Jordanian percentage in firms, which is an administrative issue and does not pose much hindrance to the sector; the same applies to the construction sub sector. On the domestic front the number of A/E offices has been growing steadily as a function of the number of engineers graduating from universities annually and due to the attractiveness of the sector for engineering firms. The data presented in Table 4 of Section 2.1 above reflects the growth in the number of firms and correlates with the above as it is obvious that there is a shift of 1-2 years between the growth in work volume and that in the number of offices.

![Figure 2: Correlating number of offices growth with the growth in work volume](image)

On the other hand, foreign offices/firms have entered the local market through many venues; the first being through foreign investment such as the UAE based firms that entered with Emaar, Damac, Limitless, Dubai Capital, Vertex, and others. These firms own development projects in Al-Abdali, as well as projects in other locations in Amman, the Dead Sea and Aqaba. The foreign offices/firms that enter the market under the umbrella of the real estate developer compete unfairly due to the fact that the source of the money was the real estate development company itself[^35] and Jordan would risk losing the project if the developer was not allowed to work with his long standing design partner.

[^34]: Structure Consulting, 2007
[^35]: Proprietary interviews with A/E sector firms, and individuals with EOC experience, 2009
The second venue is through participation in joint ventures like the project the “Living Wall” which is owned by a Jordanian company and was designed through the collaboration of Norman Foster and Maisam of Jordan. This example created significant value added to the Jordanian firm through its association with such an internationally recognized firm. Moreover, with a local partner present, all issues related to the business environment and its effect on the firm can be managed.

As for the construction sub sector, growth over the past three years in the number of companies operating in Jordan has been very positive. Table 13 below shows the growth for the years 2005 – 2007. From 2005 to 2007 there was a 59.7% increase in the number of Jordanian companies joining the sector; no new companies entered as regional Arab companies; and 14 new foreign companies have entered the market during the time period.

<table>
<thead>
<tr>
<th>Year</th>
<th>Jordanian Companies</th>
<th>Arab Companies</th>
<th>Foreign Companies</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>139</td>
<td>2</td>
<td>6</td>
<td>147</td>
</tr>
<tr>
<td>2006</td>
<td>183</td>
<td>1</td>
<td>1</td>
<td>185</td>
</tr>
<tr>
<td>2007</td>
<td>222</td>
<td>0</td>
<td>7</td>
<td>229</td>
</tr>
</tbody>
</table>

Source: JCCA annual report 2007

### 4.0 Legislative and Regulatory Environment

#### A/E Services

Companies in Jordan are formed and registered according to the Companies Law. This law determines the types of companies, the minimum capital contribution, the number of directors, the shareholders ownership, and shares, the structure of the company, and other related issues.

Foreign companies can participate with other Jordanian persons in establishing a new Jordanian company, the percentage of ownership shall be subject to the applicable legislations (i.e. The Regulation No. 54 for the year 2000, which regulates the Non-Jordanian Investments in Jordan or the Engineers Association Law).

However, in some cases the foreign companies can operate in Jordan as an Operating Foreign Company, either if they were awarded a tender to work in Jordan or operating permanently under license by the competent official authorities. Depending on the nature of activities, in both cases it is not entitled to exercise any commercial business in Jordan unless it is registered according to the provisions of the Companies Law after obtaining a permit to operate therein pursuant to the applicable Laws and regulations (i.e. Engineers Association Law).

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86 Interview with Engineer Hazem Nimri, Maisam architects, 2007
87 JCCA annual report, 2007
Legislation related to the Engineers' Association:

- Jordan Engineers Association Law No. 15 for the Year 1972: Established the Association, its structure, powers and authorities. It also set forth the requirements for Jordanians or non-Jordanians to practice the engineering profession and set forth the requirements of Association membership.
- Internal Bylaw for the Engineers' Association No. 2 for the Year 1983 issued pursuant to Article 95 of the Engineers Association Law No. 15 for the Year 1972: This bylaw regulates the registration fees collected by the Association pertaining to the registration and practicing of the profession, divisions of the engineering profession, the governing bodies within the Association, the general assembly of the Association, their powers and authorities and other basic principles with regards to the Association and its governing bodies.
- Practice of the Engineering Profession Bylaw No. 22 for the Year 1999 issued pursuant to Article 95 of the Engineers Association Law No. 15 for the Year 1972; this bylaw set out the fields of the profession and delegated the powers to the Association to issue instructions to regulate the profession.
- Practice of the Engineering Profession Instructions No.1 for the Year 2002 issued pursuant to Article 7 of the Practice of the Engineering Profession Bylaw No. 22 for the Year 1999.
- Engineering Companies and Offices Regulation No.2 of 1985 issued pursuant to Article 95 of the Engineers' Association Law No. 15 for the Year 1972; this bylaw formed a syndicate within the Association and sets out its powers and authorities.

Restrictions set forth by the Engineers Association Law:

- All engineering designs and plans must be undersigned by a local engineering firm before implementation in Jordan.\(^88\)
- Subject to 50% limitation on foreign equity.\(^89\)
- At least half of the partners in Jordanian engineering companies must be full time registered Jordanian engineers.\(^90\)
- At least 50% of equity must be held by engineers.\(^90\)
- Non-Jordanian engineering and engineering firms may provide services only through a contractual association with Jordanian firms for the purpose of implementing a specific project or tender.\(^91\)
- Non-Jordanian engineering contracting companies are required to employ at least as many Jordanian engineers as non Jordanian engineers, and in any case no less than one Jordanian engineer. Joint ventures must employ in total at least as many Jordanian as non Jordanian engineers.\(^92\)
- Practice is restricted to Jordanians, but access may be granted for Arab nationals on the condition of reciprocal treatment for Jordanians. Also, non-Arab engineers are entitled to practice and register with the Engineers Association in Jordan, but subject to the approval of the Minister of Housing and Public Works.\(^93\)
- Arab engineers, who are permitted to practice the engineering profession in their country, can register with JEA. However, they should have practiced the profession for a period not less than 7 years, obtain a residency permit, and pay

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\(^88\) Jordan Engineers Association Law No. 15 of 1972, Article (22/g)
\(^89\) Regulating Non-Jordanian Investments No. 54 for 2000, Article (3/b/l)
\(^90\) Jordan Engineers Association Law No. 15 of 1972, Article (22/ d)
\(^91\) Jordan Engineers Association Law No. 15 of 1972, Article (22/e)
\(^92\) Jordan Engineers Association Law No. 15 of 1972, Article (24/c).
\(^93\) Jordan Engineers Association Law No. 15 of 1972, Article (12)
the subscription fees with the Association. On the other hand, the Non-Arab engineers are allowed to register with the Association, provided that they meet the same requirement of the Arab engineers, and enter into a contract with a public entity or with a local or foreign company operating in Jordan (Joint venture) and further have qualifications and experience that are not available in Jordanian engineers.\textsuperscript{94}

- Foreign firms are required to transfer the technical and management skills and train local employees.\textsuperscript{95}

**Exclusivity of practicing engineering professions to engineers registered in the Jordan Engineers Association**

The Jordan Engineers Association Law prohibits any individual from practicing the ‘profession of engineering’ before finalizing his/her registration in the Association\textsuperscript{96}, in addition, an engineer shall limit him/herself to practicing the engineering work of the section or division that he/she is registered in the association and refrain from practicing other engineering works in other sections or divisions.\textsuperscript{97} Any violation of these rules incurs physical and monetary punishments\textsuperscript{98}, and if the violating individual is a member of the Engineering Association, s/he would be subject to certain disciplinary measures.\textsuperscript{99}

The Law sets out certain requirements for the registration of Jordanian engineers as well as the registration of other Arab and non-Arab engineers. Furthermore, all governmental, public, or private departments or institutions or bodies are obliged to insure that any engineer it hires is duly registered in the Association.\textsuperscript{100}

- Gives exclusivity of practicing engineering studies and designs to engineering offices and companies registered in the Association.
- Prohibits the practice of any works of engineering studies and designs unless it is performed by an engineering office or company that is registered in the Association.\textsuperscript{101}
- Sets forth requirements for establishing a Jordanian Engineering office or company.\textsuperscript{102}
  - The engineering office or company should be registered due to company law.
  - The head office of the company should be in Jordan.
  - At least half of the partners should be engineers registered in the Association who have paid their fees with a minimum 50% equity.
  - At least one of the partners has practiced the profession for not less than 7 years.
  - When forming a company, foreigners need to operate under the Regulating Non-Jordanian Investments Regulation, which determines the sectors in which foreigners are allowed to invest (foreign equity requirements) and the minimum capital amount which they are allowed to invest (investment size). Market access also includes a number of provisos allowed in certain sectors.

\textsuperscript{94} Jordan Engineers Association Law No. 15 of 1972, Article (12)
\textsuperscript{95} Engineering Companies and Offices Regulation No.2 of 1985, Article (9)
\textsuperscript{96} Articles 4, 6, 10/c and 20/a, Jordan Engineers Association Law
\textsuperscript{97} Article 20/b, Also Articles 4 and 6 of the Practice of the Engineering Profession Bylaw No. 22 for the Year 1999.
\textsuperscript{98} Articles 90-91, Jordan Engineers Association Law
\textsuperscript{99} Article 18. Practice of the Engineering Profession Bylaw No. 22 for the Year 1999.
\textsuperscript{100} Articles 71-82, Jordan Engineers Association Law
\textsuperscript{101} Articles 26, Engineers’ Association Law.
\textsuperscript{102} Article 23/a, Engineers’ Association Law.
Limits non-Jordanian investor ownership to not exceed (50%) fifty percent of the capital of any project in engineering services, including all engineering categories, urban planning and landscape architectural services.\textsuperscript{103}

Sets investment stipulations subject to the provisions of the regulation; the non-Jordanian investment shall not be less than (JD50,000) fifty thousand Jordanian Dinars or the equivalence thereof, with the exception of participation in public shareholding companies\textsuperscript{104}.

**Construction**

The Construction sector is governed by many important pieces of legislations and regulations which include the following eleven pieces of legislation:

- Construction Contractors Law No. 13 for the Year 1998, related By-laws and Instructions
- Jordan Engineers Association Law No.15 of 1972
- Public Works Bylaw no. (71) for the Year 1986
- National Construction Law No.7 for the Year 1993
- The Jordanian Labor Law , No. 8 for the Year 1996
- Standards & Metrology law NO. (22) for the year 2000
- The Investment Interim Law No. (68) For the Year 2003, that specifies the sectors entitled to exemptions and facilities specified therein.
- The Regulating Non Jordanian Investments Regulation No. (54) For the Year 2000 which specifies the sectors in which foreign investors may invest
- The Customs Law No. (20) for the year 1998
- The Companies Law No. (22) for the year 1997

Each of these pieces of legislation and subsequent regulations is reflected below in the appropriate section. Accordingly and based on these regulations, the following general issues apply:

- New companies should be registered according to the Jordanian Companies Law, which determines the type of company, the minimum capital contribution, the number of directors, the shareholders ownership, and shares, the structure of the company, incorporation procedures, merger and acquisition, and all other related issues.
- All contractors should be classified and registered with the Jordanian Construction Contractors Association (JCCA) to work in Jordan.
- All contractors should be licensed by the Ministry of Public Works and Housing for work on Government projects.
- The laws and regulations of the Ministry of Public Works and Housing and the JCCA regulate, classify, qualify and rank companies to work according to the regulations used.
- JCCA is the body responsible for organizing contractors and raising their level and qualifications through development and training in tandem with other relevant bodies in Jordan and abroad.

\textsuperscript{103} Article 3, Regulation No.(54) for the Year 2000,Regulating Non-Jordanian Investments Regulation, Issued Pursuant to Article (24) of the Investment Promotion Law No. (16) for the Year 1995

\textsuperscript{104} Article 7, Regulation No.(54) for the Year 2000,Regulating Non-Jordanian Investments Regulation, Issued Pursuant to Article (24) of the Investment Promotion Law No. (16) for the Year 1995
Registration with the Jordanian Construction Contractors Association (CCA):

It is not permitted to practice any construction contracting services unless the company is registered with the Jordanian Construction Contractors Association. Each ministry, official institution, or any other party is not allowed to accept any agreement with any contractor unless the latter is registered with the Association according to article (8) of the Construction Contractors Law.

Foreign contractors are not allowed to execute any constructing contract unless they meet the following stipulations. The contractor should be registered with:

- an official body at his domicile country
- the Jordanian Ministry of Industry & Trade
- the Contractors’ Association, and paid full fees.

Moreover, the contractor should be capable to perform the profession technically and financially.

Registration with the Jordanian Engineers Association

Engineers, both Jordanians and Non-Jordanians, must be registered with the Jordanian Engineers Association (JEA), according to the requirements determined in the Association Law. The law specifies the requirements, and sets out the procedure for such registration.

Other Restrictions

1. Based on the Companies Law, foreign investors are not allowed to invest less than a minimum of 50,000 in capital with exception for the investments in Public Shareholding Companies where the maximum shareholding percentage should not exceed 50% for foreign shareholders. Therefore, the equity of foreign investors in all the divisions of engineering services and constructions contracts including related engineering services is restricted to 50% of the company capital. The share of non-Jordanians in such projects shall not be less than 50,000 JD, and his/her ownership shall not exceed 50% of the capital, in addition to the restrictions identified in the Engineers Association Law.

2. According to the JCACA, foreign construction contractors are only allowed to access the Jordanian Market through joint ventures with Jordanian firms, and only in projects which Jordanian contractors cannot undertake alone. Exception to this may be granted in case of development projects which are externally funded and work on official facilities of diplomatic missions or in cases were the contractor may wish to execute such contracts solely for the purpose of public interest.

3. Article 6/d of the Public Works Regulation restricts the execution of works to Jordanian contractors and the execution of technical services to Jordanian consultants, provided that those Jordanian contractors and consultants possess the necessary qualifications and conditions. The mentioned regulation provides that the invitation of non-Jordanian contractors and investors to tender is allowed if it was necessary or if the tender was financed by an external development loan, provided that the provisions of the Construction Contractors Law and legislations pertaining to the Engineers Association are observed, and that the value of the returns of capital exchange in the local market are taken into consideration.

The foreign construction contractors are not entitled to execute any of the works in Jordan unless the following terms are observed:
a. Should be registered with competent authorities in the contractor’s country and practiced construction work therein.
b. Should be registered with the Ministry of Trade and Industry.
c. Should be registered with The Jordanian Construction Contractors Association and paid the full fees, and not obligated to join any other association, despite any other legislation.
d. Should be capable technically and financially and possess equipments and supplies based on prior grading made by the related entity.
e. Employ Jordanians as workers, technical staff and engineers according to the legislation in force.
f. The necessity of reciprocal treatment for Jordanians in the country from where contractor wishes to employ foreign staff.

4. Joint ventures between Jordanian and foreign firms are subject to stricter criteria in grading as follows: In Joint Venture Projects, the Jordanian partner should enjoy at least 60% of the experience needed to attain the required grading. The foreign partner should possess at least 3 times the experience needed by Jordanian firms for attaining a certain grade.

5.0. GATS/Restrictiveness Measures

5.1 Jordan’s Commitments and the affect and limitation on WTO/GATS modes of supply

Table 14 below shows the limitations for all sectors and then specifically for the A/E services and construction sub sectors.
<table>
<thead>
<tr>
<th>Sector/Sub-sector</th>
<th>Limitations on market access / Jordan</th>
<th>Limitations on national Treatment / Jordan</th>
</tr>
</thead>
<tbody>
<tr>
<td>All sectors</td>
<td>(3) All investments in public utilities are generally subject to concession. In sectors where service provision is granted by concession, commercial establishment must be in the form of Public Shareholding Companies.</td>
<td>Regarding subsidies, modes (1), (2), (3) and (4) are Unbound. (3) Foreign investments may not be less than JD 50,000. This does not apply to investments in public share-holding companies. Real Estate: (3) All purchase of real estate by non-Jordanian firms must be related to the approved business activities and is subject to Cabinet authorization. Lease of real estate by non-Jordanian firms for more than three years is subject to Cabinet approval. All juridical entities are prohibited from engaging in real estate trading. State Owned Land: (3) Authorization for purchase or lease of state owned lands is restricted to Jordanian nationals.</td>
</tr>
</tbody>
</table>

(d) Architectural services (CPC 8671)
(e) Engineering services (CPC 8672)
(g) Urban planning and landscape architectural services (CPC 8674)
| (1) None for consultation, planning or design services. However, all engineering designs and plans must be undersigned by a local engineering firm before implementation in Jordan. (2) None for consultation, planning or design services. However, all engineering designs and plans must be undersigned by a local engineering firm before implementation in Jordan. (3) Subject to 50% foreign equity limitation. Also, at least 50% of equity must be held by engineers. Otherwise, non-Jordanian engineering and architectural firms may provide services only through a contractual association with Jordanian firms for the purpose of implementing a specific project or tender. Architects, engineers, urban planners and landscape architects must be Jordanian nationals. (4) Unbound, except as indicated in the horizontal section. Architects, engineers, urban planners and landscape architects must be Jordanian nationals. |
(1) None (2) None (3) None (4) Unbound, except as indicated in the horizontal section. |

A. General Construction Work for buildings (CPC 512)
B. General Construction Work for Civil Engineering (CPC 513)
| (1) Unbound* (2) None (3) Foreign equity in Jordanian construction and contracting firms is limited to 50%. Otherwise, non-Jordanian construction and contracting firms may provide services only through a contractual association with Jordanian firms for the purpose of implementing a project or tender. Architects, engineers, urban planners and landscape architects must be Jordanian nationals. |
(1) Unbound* (2) None (3) None (4) Unbound, except as indicated in the horizontal section. |
513) C. Installation and Assembly Work (CPC 514 + 516)
D. Building Completion and Finishing Work (CPC 517)
E. Other (CPC 511, 515, 518) excluding site preparation work for mining (CPC 5115)

specific project or tender.

(4) Unbound, except as indicated in the horizontal section. The number of foreign engineers to be employed by a firm may not exceed twice the number of qualified Jordanian engineers employed by the same firm.

All sectors

(4) Unbound except for measures concerning the entry and temporary stay of a natural person who falls in one of the following categories:

Business visitors
A natural person who stays in Jordan without acquiring remuneration from within Jordan and without engaging in making direct sales to the general public or supplying services, for the purposes of participating in business meetings, business contacts including negotiations for the sale of services and/or other similar activities including those to prepare for establishing a commercial presence in Jordan. Entry and stay shall be for a period of 90 days.

Intra-Corporate Transferees
Natural persons employed by a juridical entity of another member for a period of not less than one year and who seek temporary stay in order to render services to (i) the same juridical entity which is engaged in substantive business operation in Jordan or (ii) a juridical entity constituted in Jordan and engaged in substantive business operation in Jordan which is owned by or controlled by or affiliated with the aforementioned juridical entity.

Executives
Natural persons who are senior employees of a juridical entity, who are responsible for the entire or a substantial part of the entity's operations in Jordan, receiving general supervision or direction principally from higher level executives, the board of directors or stock-holders of the business.

Managers
Natural persons who direct the juridical entity, or department or subdivision of the juridical entity, supervise and control the work of supervisory, professional or managerial employees, have the authority to hire and fire or recommend hiring, firing, or other personnel actions and exercise discretionary authority over day-to-day operations.

(4) Unbound, except for measures affecting the categories referred to under market access.
<table>
<thead>
<tr>
<th>Day operations at a senior level.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Specialists</strong></td>
</tr>
<tr>
<td>Natural persons employed by a juridical entity and possess knowledge at an advanced level of expertise and proprietary knowledge of a juridical entity product, service, research, equipment, techniques, or management.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Professionals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural persons seeking to engage, as part of services contract granted by a juridical entity engaged in substantive business in Jordan and obtained by a juridical entity of another Member, (other than entities providing services as defined by CPC 872) which has no commercial presence in Jordan in the activity at a professional level. The person must possess the necessary academic credentials and professional qualifications, which have been duly recognized, where appropriate by the professional association in Jordan.</td>
</tr>
</tbody>
</table>

The commitment relates only to the service activity which is the subject of the contract. Work permits for all categories are granted on the basis of an economic needs test, i.e. to candidates whose qualifications are not available in Jordanians or those who are seeking work in fields in which Jordanians are in short supply.

Source: www.wto.com
These restrictions are still applicable in 2008 as per the pertinent laws and regulations reflected in Section 4 above. However, the implementation has shown variations to what is stipulated, especially for foreign A/E firms who enter the market under the umbrella of foreign investment real estate development companies who in turn insist on working with these firms. In addition, JEA Law stipulates that “All engineering designs and plans must be undersigned by a local engineering firm before implementation in Jordan”\textsuperscript{105}. However, in many cases, Jordanian firms did not have the experience in “High Rise buildings” for example, nor did the JEA who has to certify the designs. This exemplifies clear weakness in the implementation of the commitments to the benefit of the foreign company against the local firm.

In construction, the same applies pertaining to the Companies Law and JCCA regulations (see Section 4 above) which stipulates that foreign firms can work only through a contractual association with Jordanian companies.

Issues related to foreign nationals remain as per the restrictions. Especially for measures concerning the entry and temporary stay of a natural person who falls into one of the following categories:

- Business visitors
- Intra-Corporate Transferees
- Executives
- Managers
- Specialists
- Professionals

The commitment relates only to the service activity which is the subject of the contract. Work permits for all categories are granted on the basis of an economic needs test; i.e., to candidates whose qualifications are not available in Jordanians or those who are seeking work in fields in which Jordanians are in short supply. One addition is that these people are wholly contractually based and the Jordanian firm at the end of the contract can terminate employment. Additionally, foreign nationals do not follow the income tax stipulations for Jordanians but pay a 10% income tax from the income obtained in Jordan.

General restrictive realities still exist in Jordan in the form of Government bureaucracy, tax legislation and customs duties and access to financing\textsuperscript{106}. These are still impediments to doing business in Jordan and shall be compared in the benchmarking section below.

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\textsuperscript{105} Jordan Engineers Association Law No. 15 of 1972, Article (22/g)
\textsuperscript{106} WEF GCR Report, 2006
6.0 Benchmarking

6.1 Global benchmarking

Globally the market for A/E services is becoming more liberalized. All nations and all sizes of economic entities stand to benefit from additional liberalization of trade in this sector\textsuperscript{107}.

As the U.S. International Trade Commission has noted, several WTO members, including Malaysia, Indonesia, and Brazil, are active in providing engineering and architecture consultancy services in foreign markets. And as the WTO Secretariat highlights, large as well as small firms are active in providing these services\textsuperscript{108}.

While cross-border supply of A/E and construction services is a viable mode of delivery due to advanced communications systems and global electronic commerce, the majority of trade in these services occurs through sales by affiliates located in foreign markets. As such, restrictions on commercial presence, such as investment constraints and limitations on the movement of personnel, greatly affect the ability of firms to provide services to foreign consumers. Residency, nationality, and registration or licensing requirements may further impede the operations of service providers operating in foreign markets. These barriers to international trade may be administered through government agencies, regulatory bodies, or professional associations, and may be specific to A/E and construction services, or applies across industries. With respect to the A/E and construction services industry, restrictions on commercial presence, the presence of natural persons, and cross-border modes of supply are most significant\textsuperscript{109}.

According to information provided by the U.S. International Trade Commission, U.S. architectural and engineering firms are highly competitive and maintain a strong presence in the global marketplace\textsuperscript{110}. This trend is likely to continue, as countries realize that it is to their advantage to allow competition in this sector to support development\textsuperscript{111}.

The U.S. has a very liberal regime regarding foreign provision of architectural services. The U.S. GATS schedule imposes no limitations on market access in the modes of cross-border supply of architectural services or commercial presence, although certain registration requirements are demanded of engineers and architects wishing to operate in the U.S.\textsuperscript{112}

Overall, countries with GATS commitments tend to maintain greater restrictions on certain professional services such as legal and dental, and provide relatively more liberal treatment of A/E services. For A/E services, the trend has been towards further

\textsuperscript{107} JV 2020, A/E sector strategy presentation, December 2004
\textsuperscript{108} JV 2020, A/E sector strategy presentation, December 2004
\textsuperscript{109} General Agreement on Trade in Services: Examination of the Schedules of Commitments Submitted by Eastern Europe, the European Free Trade Association, and Turkey Investigation No. 332-385 Publication 3127 September 1998
\textsuperscript{110} General Agreement on Trade in Services: Examination of the Schedules of Commitments Submitted by Eastern Europe, the European Free Trade Association, and Turkey Investigation No. 332-385 Publication 3127 September 1998
\textsuperscript{111} JV 2020, A/E sector strategy presentation, December 2004
\textsuperscript{112} US International Trade commission, annual report 2008
liberalization with full commitments with no or few limitations, although there are exceptions (e.g., Morocco which has nationality requirements; El Salvador and Costa Rica have residency requirements). It should be pointed out that Central American countries have subjected their PTA commitments with the US on professional services to a reciprocity provision, likely to limit the access granted only to those US states that provide for similar access\textsuperscript{113}.

For other developing countries, the improvements are more limited but again the tendency - with a few exceptions (China, Singapore) - is towards greater liberalization of the A/E services sector\textsuperscript{114}. Oman improved upon its GATS bindings for A/E services India improved upon its GATS schedule/offer in various sub-sectors\textsuperscript{115}. Chile improved on its offer by taking full commitments in architecture and engineering\textsuperscript{116}. Panama took new and improved commitments under mode 3 across all professions, but left mode 1 uncommitted\textsuperscript{117}. China relaxed various limitations under mode 3\textsuperscript{118}. Singapore improved its commitment for A/E services whereby the requirement of “residency” in Singapore was phased out by April 2005 and the requirement that not less than two/thirds of the directors of a corporation are Singapore registered or allied professionals was reduced to 51 % by April 2005\textsuperscript{119}.

It can also be noted that a few countries have commitments suggesting explicit liberalization: Bahrain, for instance, committed to phasing out some local presence requirements within 3 years of the date of entry into force of the agreement and others within 7 years of the date of signature; China committed to permit wholly owned operations in architectural and engineering as from December 2006\textsuperscript{120}.

The market potential is unlimited, as global markets open freely to international A/E services providers. According to the Organization for Economic Cooperation and Development (OECD), engineering and architectural services are often not regulated by law or reserved to specific practitioners in OECD countries. Regulation seems to affect foreign suppliers to a much lower degree in architecture and engineering, compared to accountancy and legal services, with engineering probably being the sector where access for foreign professionals and firms is least difficult. Several OECD countries have


no legal provisions applied with regard to access to the provision of architectural services (Denmark, Finland, Norway) or engineering services (Australia, Denmark, Finland, Switzerland, United Kingdom). Control of professional standards in the architectural and engineering professions probably tends to take place more through object-related regulations, norms and standards such as building regulations, safety norms, etc.\textsuperscript{121}

6.2 Benchmarking against International Standards

A/E Services

By benchmarking against International standards, regulations and technical requirements are evaluated to ensure that global and regional acceptance and competitiveness is articulated. On a global level International standards clearly identify the essential standard of service and are continuously updated and improved to match the current sector development.

Moreover “Best Practices” guidelines exist to ensure dissemination of knowledge and application of best practices in the sector. The role of civil society is of paramount importance to ensure that regulations and laws do not stifle the sector and that enough control is placed to ensure that quality and reliability are maintained and hence the sector is branded collectively to conform to these standards of excellence. In the US, for example the American Council of Engineering Companies (ACEC) is the body responsible for developing the sector and safeguarding the rights and practice standards of the sector.

The Core purpose of ACEC is “To promote the business interests of engineering companies by providing legislative advocacy and business services” their Vision is “To be the lead organization promoting the business interests of companies providing professional knowledge and services for the built environment”\textsuperscript{122}. ACEC aggressively promotes the use of Qualifications-Based-Selection (QBS) at all levels of public and private sector procurement\textsuperscript{123} which has been accepted as best practice. Globally the International Federation of Consulting Engineers (FIDIC)\textsuperscript{124} is the body responsible for developing contract standards, which have been adopted in Jordan and are considered best practice. Courses offered by FIDIC are highly regarded and are always of importance to the A/E sector in Jordan\textsuperscript{125}. FIDIC also has a well articulated code of ethics to which all members have to adhere to and incorporates it as the basis towards ethical interaction and intervention by engineers from member countries\textsuperscript{126}.

On the architectural side, the American Institute of Architects (AIA) is foundation organization for Architects with a highly regarded code of ethics\textsuperscript{127}. The AIA online library has numerous published “Best Practices” which act as a guideline for the benefit of architects all over the world\textsuperscript{128}. Moreover, national bodies in Europe and Asia are also similar in value and importance to their National sector.

\textsuperscript{121} The service economy, OECD, 2000
\textsuperscript{122} ACEC strategic Plan, 2002, last amendment 2005
\textsuperscript{123} www.acec.org
\textsuperscript{124} www.fidic.org
\textsuperscript{125} A/E Business Council
\textsuperscript{126} http://www1.fidic.org/about/ethics.asp
\textsuperscript{127} http://www.aia.org/aiaucmp/groups/aia/documents/pdf/aiap074122.pdf
\textsuperscript{128} http://www.aia.org/practicing/bestpractices/index.htm
In Jordan, the body responsible for developing standards and regulations for the sector is the Jordan Engineers association (JEA). JEA operates within its structure to support and advocate for the benefit of the engineers in Jordan. It has also created the Engineering Offices commission (EOC) to be the body within JEA that advocates on behalf of the A/E offices and Firms\textsuperscript{129}. However, JEA needs to further increase its involvement in elevating the A/E sector to Global standards\textsuperscript{130}.

The A/E Business Council, on the other hand, as a more focused organization on excellence has been coordinating with the JEA and EOC and together they are playing a stronger role in developing the sector. It is one of those instances were a cooperation is benefiting the sector. The A/E Business Council was instrumental in making Jordan a member country in FIDIC and in cooperating with the JEA in hosting valuable courses from the federation open to engineers in Jordan.

Accordingly and in the absence of a national body responsible for the adoption of excellence measures, the reliance on traditional education institutions like universities becomes more necessary. Unfortunately in Jordan, the education and academic background of the architects is not compatible to sector needs and does not address new trends and new software\textsuperscript{131}. Accordingly, the sector lacks in expertise and the reserve of technical knowledge is limited, and access to practices with international exposure is limited\textsuperscript{132}. Moreover, professional and innovative practice is hindered by lack of community understanding and the under-developed guidelines and standards of practice\textsuperscript{133}. Additionally, architects are further controlled by the level of contractors and innovative building designs are sometimes hampered by outdated construction methods\textsuperscript{134}. Moreover, project delivery methods (i.e. contracts, etc.) are underdeveloped and do not allow for integrated solutions\textsuperscript{135}.

**Construction**

Unlike the A/E sector where leading business Councils and NGO’s work on the development of the sector, the Construction sector has direct affecting inputs from other technical associations. The American Society of Testing and Materials\textsuperscript{136} (ASTM) for example set the standard for the specifications of reinforced steel for construction (ASTM A615M). The American concrete Institute\textsuperscript{137} sets the standard for developing concrete uses and standards that are accepted globally. On the other hand, International federations such as FIDIC mentioned earlier, developed contract agreements used in construction\textsuperscript{138}.

As modes 3 and 4 are the most fundamental for the supply of construction services, issues such as labor certification and Engineering qualification are very important. Moreover, company classification and qualification adds to the understanding in a transparent manner who to work with and who not to work with. In Jordan these accounts fall short on international best practices. Laborers are not certified to work and

\textsuperscript{129} www.jea.org.jo
\textsuperscript{130} Conventional Wisdom in Jordan, ask any engineer on the street
\textsuperscript{131} Interviews with A/E Business council member firms, December 2008
\textsuperscript{132} Interviews with A/E Business council member firms, December 2008
\textsuperscript{133} Interviews with A/E Business council member firms, December 2008
\textsuperscript{134} Interviews with A/E Business council member firms, December 2008
\textsuperscript{135} interviews with A/E Business council member firms, December 2008
\textsuperscript{136} http://www.astm.org/Standards/A615.htm
\textsuperscript{137} http://www.concrete.org/ABOUT/AB_PLAN.HTM#industry
\textsuperscript{138} http://www1.fidic.org/bookshop/
until recently with the establishment of the National Employment and Training company, very little was made in terms of certifying laborers as skilled or professionals. Accordingly masons, painters, blacksmiths, and other professions within the construction sector are not certified. Engineers on the other hand have university degrees that reflect their qualifications. But professional degrees like the Professional Engineer (PE) in the USA or Chartered Engineer in the UK are not applied to the sector in Jordan. Moreover, contractor classification and qualification is not based on international standards or best practices.

6.3 Benchmarking Against Competitors

The schedules in Table 15 below reflect the commitments made by Bulgaria, Czech Republic, Hungary, Iceland, Liechtenstein, Norway, Poland, Romania, Slovak republic, Slovenia, Switzerland and Turkey. The table is organized by country per the CPC code for the service covered under the commitment listed in the table.

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130 General Agreement on Trade in Services: Examination of the Schedules of Commitments Submitted by Eastern Europe, the European Free Trade Association, and Turkey Investigation No. 332-385 Publication 3127 September 1998
Table 15: GATS commitments for selected European countries

<table>
<thead>
<tr>
<th>Trading Partner</th>
<th>Mode of Supply</th>
<th>Cross-Border Supply</th>
<th>Consumption Abroad</th>
<th>Commercial Presence</th>
<th>Presence of Natural Persons</th>
<th>Service Per CPC Code</th>
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<td><strong>Bulgaria</strong></td>
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<td>Market Access: None, except that market access is limited to natural persons subject to recognition of their technical qualifications and accreditation by a professional chamber in the Republic of Bulgaria. Services must be supplied by natural persons subject to recognition of their technical qualifications and accreditation by a professional chamber in the Republic of Bulgaria. Accreditation requirements: project work in the last two years, staff and technical capability, and bank references from a highly ranked foreign bank. In addition, the main scope of the foreign person’s activities must be Levant architectural and engineering services. National Treatment: None</td>
<td>Market Access: When a project is of national or regional significance, services may be provided only in partnership with, or as subcontractors of, local service suppliers. Services must be supplied by natural persons subject to recognition of their technical qualifications and accreditation by a professional chamber in the Republic of Bulgaria. National Treatment: Unbound except as indicated in the cross-industry commitments.</td>
<td>These commitments cover: CPC 8671 – Architectural services. CPC 8672 - Engineering services. CPC 8673 - Integrated engineering services.</td>
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<td>These commitments cover: CPC 8671 - Architectural services. CPC 8672 - Engineering services.</td>
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Hungary
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Iceland
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Liechtenstein
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<td>Market Access: None A foreign service provider may engage in these services after becoming a temporary member of the related Union of Chambers.</td>
<td>Market Access: None A foreign service provider may engage in these services after becoming a temporary member of the related Union of Chambers.</td>
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<td>None</td>
<td>National Treatment: None</td>
<td>CPC 512 - General construction work for buildings. CPC 5131 - Construction work for highways, streets, roads, other vehicular and pedestrian ways, guardrails, railways, and airfield runways. CPC 5132 Construction work for bridges, elevated highways, tunnels, and subways. CPC 5135 - Construction work for local pipelines and cables; ancillary works. CPC 514 - Assembly and erection of prefabricated constructions. CPC 5161 - Heating, ventilation, and air conditioning work. CPC 5162 - Water plumbing and drain laying work. CPC 51641 - Electrical wire and fitting work. CPC 51643 - Burglar alarm system construction work. CPC 51644 – Residential antenna construction work. CPC 5165 - Installation work (electrical wiring, water, heat, sound).</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Market Access:**
- Unbound, except as indicated in the cross-industry commitments.
- Market access is limited to natural persons subject to recognition of their technical qualifications and accreditation by a professional chamber in the Republic of Bulgaria. Accreditation is subject to the following criteria: recognition of technical qualification in Bulgaria, experience in the field of construction, and project work in the last two years.
- National Treatment: Unbound except as indicated in the cross-industry commitments.

**National Treatment:**
- None, except that market access is limited to natural persons subject to recognition of their technical qualifications and accreditation by a professional chamber in the Republic of Bulgaria. Accreditation is subject to the following criteria: recognition of technical qualification in Bulgaria, experience in the field of construction, and project work in the last two years.
- National Treatment: None.

<table>
<thead>
<tr>
<th>Bulgaria (continued)</th>
<th>Market Access: Unbound</th>
<th>National Treatment: None</th>
<th>National Treatment: None</th>
<th>National Treatment: None</th>
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</thead>
<tbody>
<tr>
<td>Market Access: None</td>
<td>National Treatment: None</td>
<td>National Treatment: None</td>
<td>National Treatment: None</td>
<td>National Treatment: None</td>
</tr>
</tbody>
</table>

These commitments cover:
- CPC 517 - Building completion and finishing work.
**Czech Republic**

| Market Access: | Unbound National Treatment: Unbound | Market Access: None National Treatment: None | Market Access: Unbound National Treatment: Unbound | Market Access: Unbound except as indicated in the cross-industry commitments. | These commitments cover: CPC 511 - Pre-erection work at construction sites. CPC 512 - Construction work for buildings. CPC 513 - Construction for civil engineering. CPC 514 - Assembly and **Unbound except as indicated in the cross-industry commitments.** These commitments exclude: CPC 511 - Pre-erection work at construction sites. CPC 5133 - Construction work for waterways, harbors, dams, and other waterworks. CPC 5134 - Construction work for long distance pipelines, communication and power lines(cables). CPC 5136 - Construction work for constructions for mining and manufacturing. CPC 5137 - Construction work for constructions for sport and recreation. CPC 5139 - Construction work for engineering works not elsewhere classified. CPC 515 - Special trade construction work. CPC 51642 - Fire alarm construction work. CPC 51649 - Other electrical construction work. CPC 5166 - Fencing and railing construction work. CPC 5169 - Other installation work. CPC 518 - Renting services related to equipment for construction or demolition of building or civil engineering works, with operator. |
|---------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| Iceland | CPC 515 - Special trade construction work. | CPC 518 - Renting services related to equipment for construction or demolition of building or civil engineering works, with operator. | These commitments cover: CPC 512 - Construction work for buildings. CPC 513 - Construction for civil engineering. CPC 514 - Assembly and erection of prefabricated constructions. CPC 516 - Installation work. CPC 517 - Building completion and finishing work. These commitments exclude: CPC 511 - Pre-erection work at construction sites. CPC 515 - Special trade construction work. CPC 518 - Renting services related to equipment for construction or demolition of building or civil engineering works, with operator. | These commitments cover: CPC 511 - Pre-erection work at construction sites. CPC 515 - Special trade construction work. CPC 518 - Renting services related to equipment for construction or demolition of building or civil engineering works, with operator. |
| Norway  | Market Access: None National Treatment: None | Market Access: None National Treatment: None | Market Access: None National Treatment: None | Market Access: None National Treatment: None |
|         | Unbound except as indicated in the cross-industry commitments. A building contractor and the | Unbound except as indicated in the cross-industry commitments. | Unbound except as indicated in the cross-industry commitments. A building contractor and the | Unbound except as indicated in the cross-industry commitments. A building contractor and the |
supervisor in charge of the work must have lived in Norway for at least one year and continue to be resident in Norway. Exceptions may be granted under special circumstances. If the contractor moves from Norway, the applicant will not be approved before residency is resumed.

**CPC 515** - Special trade construction work.
**CPC 517** - Building completion and finishing work.
**CPC 518** - Renting services related to equipment for construction or demolition of building or civil engineering works, with operator.

<table>
<thead>
<tr>
<th>Market Access: None National Treatment: None</th>
<th>Market Access: None National Treatment: None</th>
<th>Market Access: None National Treatment: None</th>
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<td>Market Access: None National Treatment: None</td>
<td>Market Access: None National Treatment: None</td>
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</tbody>
</table>

These commitments cover:
**CPC 514** - Assembly and erection of prefabricated constructions.
**CPC 516** - Installation work.

<table>
<thead>
<tr>
<th>Poland</th>
<th>Market Access: Unbound National Treatment: Unbound</th>
<th>Market Access: None National Treatment: None</th>
<th>Market Access: None National Treatment: None</th>
<th>National Treatment: None</th>
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<td>Market Access: None National Treatment: None</td>
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<td>Market Access: None National Treatment: None</td>
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<td>Market Access: None National Treatment: None</td>
<td>Market Access: None National Treatment: None</td>
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</tr>
</tbody>
</table>

These commitments cover:
**CPC 511** - Pre-erection work at construction sites.
**CPC 512** - Construction work for buildings.
**CPC 513** - Construction for civil engineering.
**CPC 514** - Assembly and erection of prefabricated constructions.
**CPC 515** - Special trade construction work.
**CPC 516** - Installation work.
**CPC 517** - Building completion and finishing work.
**CPC 518** - Renting services related to equipment for construction or demolition of building or civil engineering works, with operator.

<table>
<thead>
<tr>
<th>Romania</th>
<th>Market Access: Unbound National Treatment: Unbound</th>
<th>Market Access: None National Treatment: None</th>
<th>Market Access: None National Treatment: None</th>
<th>National Treatment: None</th>
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<td>Market Access: None National Treatment: None</td>
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<td>Market Access: None National Treatment: None</td>
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<td>Market Access: None National Treatment: None</td>
<td>Market Access: None National Treatment: None</td>
<td>Market Access: None National Treatment: None</td>
<td>Market Access: None National Treatment: None</td>
<td></td>
</tr>
</tbody>
</table>

These commitments cover:
**CPC 512** - Construction work for buildings.
| Slovak Republic | Market Access: Unbound National Treatment: Unbound | Market Access: None National Treatment: None | Market Access: Unbound National Treatment: Unbound | Market Access: Unbound except as indicated in the cross-industry commitments. National Treatment: Unbound except as indicated in the cross-industry commitments. These commitments cover CPC 511 - Pre-erection work at construction sites. CPC 512 - Construction work for buildings. CPC 513 - Construction for civil engineering. CPC 514 - Assembly and erection of prefabricated constructions. CPC 516 - Installation work. CPC 517 - Building completion and finishing work. These commitments exclude: CPC 515 - Special trade construction work. CPC 518 - Renting services related to equipment for construction or demolition of building or civil engineering works, with operator. |

National Treatment: None except as indicated in the cross-industry commitments. CPC 513 - Construction for civil engineering. CPC 514 - Assembly and erection of prefabricated constructions. CPC 516 - Installation work. CPC 517 - Building completion and finishing work. These commitments exclude: CPC 511 - Pre-erection work at construction sites. CPC 515 - Special trade construction work. CPC 518 - Renting services related to equipment for construction or demolition of building or civil engineering works, with operator.
<table>
<thead>
<tr>
<th>Country</th>
<th>Market Access:</th>
<th>National Treatment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slovenia</td>
<td>Unbound</td>
<td>None</td>
</tr>
<tr>
<td>Slovak Republic</td>
<td>Unbound</td>
<td>None</td>
</tr>
</tbody>
</table>

Market Access: None except as indicated in the cross-industry commitments.
National Treatment: None except as indicated in the cross-industry commitments.
Commercial presence required.

These commitments cover:
- CPC 511 - Pre-erection work at construction sites.
- CPC 512 - Construction work for buildings.
- CPC 513 - Construction for civil engineering.
- CPC 514 - Assembly and erection of prefabricated constructions.
- CPC 516 - Installation work.
- CPC 517 - Building completion and finishing work.

These commitments exclude:
- CPC 515 - Special trade construction work.
- CPC 518 - Renting services related to equipment for construction or demolition of building or civil engineering works.
### Slovenia
<table>
<thead>
<tr>
<th>Market Access: Unbound</th>
<th>National Treatment: None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unbound National Treatment: None</td>
<td>None</td>
</tr>
</tbody>
</table>

Market Access: None National Treatment: None

Market Access: Unbound except as indicated in the cross-industry commitments. National Treatment: Unbound except as indicated in the cross-industry commitments. Commercial presence required.

These commitments cover:
- CPC 512 - Construction work for buildings
- CPC 513 - Construction for civil engineering.
- CPC 514 - Assembly and erection of prefabricated constructions.
- CPC 516 Installation work
- CPC 517 - Building completion and finishing work.

### Switzerland
<table>
<thead>
<tr>
<th>Market Access: Unbound</th>
<th>National Treatment: None</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unbound National Treatment: None</td>
<td>None</td>
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</tbody>
</table>

Market Access: None National Treatment: None

Market Access: Unbound except as indicated in the cross-industry commitments. National Treatment: Unbound except as indicated in the cross-industry commitments.

These commitments cover:
- CPC 511 - Pre-erection work at construction sites.
- CPC 515 - Special trade construction work.
- These commitments exclude:
- CPC 518 - Renting services related to equipment for construction or demolition of building or civil engineering works, with operator.

- CPC 512 - Construction work for buildings
- CPC 513 - Construction work for highways (except elevated highways), streets, roads, railways, and airfield runways.
- CPC 5131 - Construction work for highways (except elevated highways), streets, roads, railways, and airfield runways.
- CPC 5132 - Construction work for bridges, elevated highways, tunnels, and...
subways.
CPC 517 - Building completion and finishing work.

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unbound</td>
<td>None</td>
<td>None</td>
<td>Unbound except as indicated in the cross-industry commitments.</td>
</tr>
<tr>
<td>National Treatment: Unbound</td>
<td>National Treatment: Unbound</td>
<td>National Treatment: Unbound except as indicated in the cross-industry commitments.</td>
<td>National Treatment: Unbound except as indicated in the cross-industry commitments.</td>
</tr>
</tbody>
</table>

Unbound for installations in the area of energy, heating, water, communications, and elevators.

These commitments cover:
CPC 514 - Assembly and erection of prefabricated constructions.
CPC 516 - Installation work.

These commitments exclude:
CPC 5133 - Construction work for waterways, harbors, dams, and other waterworks.
CPC 5134 - Construction work for long distance pipelines, communication and power lines (cables).
CPC 5135 - Construction work for local pipelines and cables; ancillary works.
CPC 5136 - Construction work for constructions for mining and manufacturing.
CPC 5137 - Construction work for constructions for sport and recreation.
CPC 5139 - Construction work for engineering works not elsewhere classified.
CPC 515 - Special trade construction work.
CPC 518 - Renting services related to equipment for construction or demolition of building or civil engineering works, with operator.
<table>
<thead>
<tr>
<th>Turkey</th>
<th>Market Access: None</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Responsible engineers or architects of the firm must be temporary members of the related Union of Chambers.</td>
</tr>
<tr>
<td></td>
<td>National Treatment: None</td>
</tr>
<tr>
<td></td>
<td>For investments that are not subject to patent and can be carried out with the technology used in Turkey, investor public entities will give priority to domestic firms for work which they cannot perform such as architectural, engineering, and consultancy services. Excluded are projects financed by international institutions. With respect to government tenders, the ratio of discrimination in favor of national companies shall be determined by the Ministry according to the decision of the Council of Ministers. Advantage up to 15</td>
</tr>
<tr>
<td></td>
<td>These commitments cover:</td>
</tr>
<tr>
<td></td>
<td>CPC 512 - Construction work for buildings.</td>
</tr>
<tr>
<td></td>
<td>CPC 513 - Construction for civil engineering.</td>
</tr>
<tr>
<td></td>
<td>CPC 514 - Assembly and erection of prefabricated constructions.</td>
</tr>
<tr>
<td></td>
<td>CPC 516 - Installation work.</td>
</tr>
<tr>
<td></td>
<td>CPC 517 - Building completion and finishing work.</td>
</tr>
<tr>
<td></td>
<td>These commitments exclude CPC 511 - Pre-erection work at construction sites.</td>
</tr>
<tr>
<td></td>
<td>CPC 515 - Special trade construction work.</td>
</tr>
<tr>
<td></td>
<td>CPC 518 - Renting services related to equipment for construction or demolition of building or civil engineering works, with operator.</td>
</tr>
<tr>
<td></td>
<td>National Treatment: None</td>
</tr>
<tr>
<td></td>
<td>For construction services, the establishment of an ordinary partnership under the Civil Code (which is not a legal entity), formed by non-residents for international tenders in Turkey, is subject to permission from the Ministry of the Under secretariat of Treasury and Foreign Trade.</td>
</tr>
<tr>
<td></td>
<td>National Treatment: None</td>
</tr>
<tr>
<td></td>
<td>These commitments cover:</td>
</tr>
<tr>
<td></td>
<td>CPC 512 - Construction work for buildings.</td>
</tr>
<tr>
<td></td>
<td>CPC 513 - Construction for civil engineering.</td>
</tr>
<tr>
<td></td>
<td>CPC 514 - Assembly and erection of prefabricated constructions.</td>
</tr>
<tr>
<td></td>
<td>CPC 516 - Installation work.</td>
</tr>
<tr>
<td></td>
<td>CPC 517 - Building completion and finishing work.</td>
</tr>
<tr>
<td></td>
<td>These commitments exclude CPC 511 - Pre-erection work at construction sites.</td>
</tr>
<tr>
<td></td>
<td>CPC 515 - Special trade construction work.</td>
</tr>
<tr>
<td></td>
<td>CPC 518 - Renting services related to equipment for construction or demolition of building or civil engineering works, with operator.</td>
</tr>
</tbody>
</table>
percent may be obtained in favor of national companies, however, this issue and ratio (also the system applied if partnership between national and foreign companies exists) should be mentioned in the bid contract.

Source: (General Agreement on Trade in Services: Examination of the Schedules of Commitments Submitted by Eastern Europe, the European Free Trade Association, and Turkey Investigation No. 332-385 Publication 3127 September 1998) [Hungary and Liechtenstein did not schedule commitments in construction services].
6.4 Regional benchmarking

The “horizontal” commitments that apply to all sectors are of very high importance for the sector. As mentioned earlier Modes, 3 and 4 reflect the most important modes of supply. In A/E services issues related to limitation on market access and biases towards expatriates as stipulated in limitation on national treatment are fundamental to the availability of a supply business environment. In benchmarking the horizontal commitments, the following tables reflect the commitments of Saudi Arabia, Qatar, and United Arab Emirates (UAE) against those of Jordan. This comparison was made because the GCC countries are the main market for Jordanian engineers in which almost 350,000 Jordanian engineers work\textsuperscript{140}.

The tables reflect that in Jordan there are no limitations to market access with the exception of the case of owning public utilities which are subject to concession; in that case the form of ownership should be a Public Shareholding company. This is the case with Orange which operates Jordan Telecom and Lafarge of France which operates the cement company. Both are public shareholding companies and accordingly are stipulated to ownership restrictions if any, as stipulated in the Companies Law and investment laws of Jordan and are sector specific. Similar laws are applied in Saudi Arabia and the UAE with the UAE limiting foreign ownership to 49%. In Qatar, commercial presence is dependant on the type of service to be provided and is linked to co-ownership and sponsorship from a Qatari National. Foreign access should also reflect benefit to the economy in terms of technology transfer.

Moreover as pertaining to the free access to the business community, all countries have stipulated measures that entry has to be on a real need basis where local professionals are unable to meet the needs. Additionally, the duration of stay is linked to the contractual agreement and is limited to 90 days in Jordan and 180 days in Saudi Arabia, both times are renewable as needed by the contract. In Qatar all stay has to be linked to an agreement as self employment is not allowed. In the UAE there are no limitations accounted for in the schedules.

From the practical experience of Jordanian companies operating the region, it is far easier to obtain labor in the Gulf as it is in Jordan\textsuperscript{141}. This is more applicable to the construction sector CPC 512+ but is also applied in cases for companies like the Arab Center for Engineering Studies (ACES) that work in geotechnical studies and site surveys where the need for skilled labor is of value. ACES has 12 sister companies mostly in the Gulf region and they are all registered and operating within the confines of their respective incorporation and association rules and regulations dictated by the applicable local laws.

In areas of limitations on national treatment, Jordan has the least limitation in comparison to Qatar who only allows nationals to own stock and not pay tax while the UAE does not allow foreign land ownership. The tables below detail the commitments on both accounts and benchmarks Jordan to the three countries (Saudi Arabia, Qatar and UAE). Table 16 below provides the details.

\textsuperscript{140} Ma’moun Siyam, Report on Jordanian expatriate remittances, Amman Chamber of Commerce, April 2007
\textsuperscript{141} Interview with Dr. Izz Eddin Katkhuda, ACES, December 2008
Table 16: Limitations on Market Access, all sectors and sub sectors, for selected regional countries

<table>
<thead>
<tr>
<th>Modes of supply:</th>
<th>1) Cross-Border supply</th>
<th>2) Consumption abroad</th>
<th>3) Commercial presence</th>
<th>4) Presence of natural person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jordan</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Qatar</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Saudi Arabia</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>UAE</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

3) Limitation on market access

- **Jordan**: All investments in public utilities are generally subject to concession. In sectors where service provision is granted by concession, commercial establishment must be in the form of Public Shareholding companies.

- **Qatar**: All investments in public utilities are generally subject to concession. In sectors where service provision is granted by concession, commercial establishment must be in the form of Public Shareholding companies.

- **Saudi Arabia**: All investments in public utilities are generally subject to concession. In sectors where service provision is granted by concession, commercial establishment must be in the form of Public Shareholding companies.

- **UAE**: Commercial presence for all services listed in this Schedule, other than business services are subject to incorporation under the Companies Act either as joint-stock companies or as limited liability companies.

3) (i) Commercial presence for all services listed in this Schedule, other than business services are subject to incorporation under the Companies Act either as joint-stock companies or as limited liability companies.

3) (ii) Commercial presence for business services are subject to formation of a company, and registration of such a company under the Professional Companies Law.

3) Commercial presence will be through either (i) a representative office or (ii) an incorporation as a company with maximum foreign equity participation of 49% subject to UAE law.

With the exemption of banks, financial and insurance institutions and other sectors and sub-sectors which are not stipulated as areas of commitments with limitations on the number of service suppliers in the attached schedules, foreign commercial
presence should be either through a Qatari Agent working in the same field of services or related to it (official agency contract must be registered with the Ministry of Finance, Economy and Commerce). Or: through a partnership with the capital of Qatari Company.

Foreign commercial presence may be required to provide certain benefits in the form of technology transfer, research and development programs, technical or marketing assistance and educational or training of local manpower.

<table>
<thead>
<tr>
<th>4) Unbound except for measures concerning the entry and temporary stay of a natural person who falls in one of the following categories:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Business visitors</strong></td>
</tr>
<tr>
<td>A natural person who stays in Jordan without acquiring remuneration from within Jordan and without engaging in making direct sales to the general public or supplying services, for the purposes of participating in business meetings, business contacts including negotiations for the sale of services and/or other similar activities including those to prepare for establishing a commercial presence in Jordan. Entry and stay shall be for a period of 90 days.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(4) Unbound, except for measures concerning the entry and temporary stay of natural persons in the following categories:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Managers</td>
</tr>
<tr>
<td>- Specialists, and</td>
</tr>
<tr>
<td>- Skilled technicians</td>
</tr>
<tr>
<td>Presence of foreign natural persons as self employers is not allowed.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(4) Unbound, except for measures concerning the entry and temporary stay of natural persons in the following categories:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Business Visitors: A natural person who stays in Saudi Arabia, without acquiring remuneration from within Saudi Arabia and without engaging in making direct sales to the general public or supplying services, for the purposes of participating in business meetings, business contacts including negotiations for the sale of services and/or other similar activities including those to prepare for establishing a commercial presence in Saudi Arabia. Entry and stay shall be for a period of no more than 180 days, including multiple entries.</td>
</tr>
</tbody>
</table>
Intra-corporate transferees (ICT)

Intra-corporate transferees of managers, executives and specialists (as defined below), who have work experience for a period of at least three years in the same field prior to the date of application for entry into the Kingdom, to an affiliate in Saudi Arabia of a juridical person. Entry and stay of such managers, executives and specialists shall be subject to the following conditions:

Their number shall be limited to 25% of the total workforce of each service supplier. However, a minimum of three persons will be allowed. Alternatively to the above, the service supplier may have the following Option, the number of managers, executives and specialists of each service supplier shall be limited to 15%; and the number of other foreign employees (i.e. other than managers, executives, or specialists) of each service supplier shall be limited to 10%, or vice versa. However, a minimum of two ICT will be allowed as compliant with the 15% threshold.

Their entry and stay shall be for a period of two years, renewable for similar periods. Certain positions in a company may be reserved for Saudi nationals in all categories. These positions are recruitment and personnel, receptionists, cashiers, civil security guards, and transaction (government relations) follow up.

<table>
<thead>
<tr>
<th>Professionals</th>
<th>Definitions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural persons seeking to engage, as part of services contract granted by a juridical entity engaged in substantive business in Jordan and obtained by a juridical entity of another Member, (other than entities providing services as defined by CPC 872) which has no commercial presence in Jordan in the activity at a professional level. The person must possess the</td>
<td>Managers: Persons within an organization, who primarily direct the organization or a department or sub-division of the organization, supervise and control the work of other supervisory, professional or managerial employees, have the authority to hire or fire or recommend hiring, firing or other personnel action (such as promotion or leave authorization) and exercise discretionary authority over day-to-day operation,</td>
</tr>
</tbody>
</table>
necessary academic credentials and professional qualifications, which have been duly recognized, where appropriate by the professional association in Jordan. The commitment relates only to the service activity which is the subject of the contract. Work permits for all categories are granted on the basis of an economic-needs test, i.e. to candidates whose qualifications are not available in Jordanians or those who are seeking work in fields in which Jordanians are in short supply. Intra-corporate transferees who are executives, managers and specialists (as defined above) are presumed to meet the economic needs test requirements. Temporary work and residency permits are required. Such permits are issued for a maximum period of one year, but are renewable.

Executive: Persons within an organization, who primarily direct the management of the organization, establish the goals and policies of the organization, exercise wide latitude in decision-making and receive only general supervision or direction from higher-level executives, the board of directors or stockholders of the business. Executives would not directly perform tasks related to the actual provision of service or services of the organization.

Specialists: Persons within an organization who possess knowledge at an advanced level of expertise and who possess proprietary knowledge of the organizations services, research, equipment, techniques or management.

Contractual service suppliers Employees of contractual service suppliers, i.e. employees of juridical persons with no commercial presence in Saudi Arabia, who have obtained a service contract in Saudi Arabia requiring the presence of their employees in order to fulfill the contract. Entry and stay of such persons shall be for a period of no more than 180 days which would be renewable. Entry of such persons shall be allowed for: Architectural services (CPC 8671) Urban planning and landscape architectural services (CPC 8674) Engineering services (CPC 8672) Integrated engineering services (CPC 8673)

Independent Professionals Independent Professionals (i.e. natural persons) as part of a service contract with juridical person in Saudi Arabia for rendering professional services in which he/she possesses the necessary academic credentials and professional qualifications with three years experience in the same field. Their entry and stay shall be for a period of 180 days, which may be renewable. Such persons shall be allowed only for Construction & related engineering services (CPC 512, 513, 516 + 517).

Installers and maintainers Qualified specialists supplying installation or maintenance services. The supply of that service has to occur on a contractual basis between the builder of the machinery or equipment and the owner of that machinery or equipment, both of them being juridical persons. Temporary entry is granted for a period of stay of no more than 90 days which would be renewable.
Table 17: Limitation on National Treatment, all sectors and sub sectors for selected regional countries

<table>
<thead>
<tr>
<th>Modes of supply:</th>
<th>Limitation on national treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Cross-Border supply</td>
<td>2) Consumption abroad</td>
</tr>
<tr>
<td>All Sector and Sub Sector</td>
<td>Jordan</td>
</tr>
</tbody>
</table>

- 3) Possessing, buying, selling or dealing in Qatari shares are, presently, confined to Qatari natural or juridical persons. Foreigners are not allowed to invest in Qatari shares.

- The restriction on acquisition of Qatari shares by foreigners is made because of the small number of Qatari joint stock companies (around 20) and absence of organized stock exchange market. Acquisition of land or real estate by foreign natural persons or foreign juridical persons are not allowed. Foreigners can acquire land for economic activities on long lease particularly for industrial use. Foreign nationals or companies with foreign share holdings may be required to pay direct taxes on income derived from work or operations in Qatar, whereas local services suppliers or local Qatari companies may not be required to pay similar taxes (Law nr. 11 of 93). Foreign nationals or companies may obtain tax exemption for 5-10 years before making the investment.

- National services industries and services may have some kind of

- Foreign service suppliers require approval from the Saudi Arabian General Investment Authority for establishing commercial presence in Saudi Arabia according to the Foreign Investment Law of April 2000 and Article 5:3 of the Regulation of the Foreign Investment Act.

- Non Saudi nationals may acquire the right to own real estate in Saudi Arabia by succession. Foreign establishments authorized to carry on their activities in the Kingdom under the Foreign Investment Law may own real estate in accordance with the present laws and regulations governing foreign ownership of real estate.

- Non Saudi business entities and foreign natural persons are subject to income tax while Saudi entities and Saudi individuals are

- Acquisition of land and real estate is not permitted to foreigners or to companies in which foreign nationals have a share holding.

- Foreign nationals or companies with foreign share holdings may be required to pay direct taxes on income derived from work or operations in the UAE, whereas local services suppliers or local UAE companies may not be required to pay similar taxes keeping in view the provisions of paragraph (d) of
<p>| | | | |</p>
<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>incentives and assistance, like industrial land blocks, easy financial loans, market research and marketing programmes including the organization of exhibitions or facilitating its taking part in Qatari pavilion in international fairs and exhibitions, with free or lowered costs, establishing of marketing centres (inside or outside the country), and/or granting discount on the prices of its advertising programs in national TV and national advertising agencies and incentives alike, some other</td>
<td>subject to Zakat. Future changes in Saudi tax code will not be less favorable to foreign service providers than the existing code. (iv) Foreign service entities and foreign natural persons shall have access to subsidies available in the country. However some subsidies on certain services will be available to Saudis only.</td>
<td>Article XIV. (iii) Government subsidized services may only be extended to UAE nationals.</td>
<td></td>
</tr>
<tr>
<td>(4) Unbound, except for measures affecting the categories referred to under market access.</td>
<td>(4) Unbound, except for measures concerning the categories of natural persons referred to in the market access column. Housing and social programs and some aspects of free health care are limited to Qatari citizens.</td>
<td>(4) Unbound, except as in the column for limitation on market access</td>
<td></td>
</tr>
<tr>
<td>Residency requirements: 4) Managing director of a branch or juridical entity must be resident in Jordan.</td>
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</tr>
</tbody>
</table>
**Table 18: Comparison of Regional Countries per modes of supply for A/E and Construction Sub-Sectors**

<table>
<thead>
<tr>
<th>Sector or sub-sector</th>
<th>Limitation on market access</th>
<th>Limitation on national treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jordan</td>
<td>Qatar</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Business services</td>
<td>(1) None for consultation,</td>
<td>(1) None</td>
</tr>
<tr>
<td>A. Professional</td>
<td>planning or design services.</td>
<td>(2) None</td>
</tr>
<tr>
<td>Services</td>
<td>However, all engineering</td>
<td>(3) Access only for projects</td>
</tr>
<tr>
<td></td>
<td>designs and plans must be</td>
<td>of over $100 million or the</td>
</tr>
<tr>
<td></td>
<td>undersigned by a local</td>
<td>equivalent amount in other</td>
</tr>
<tr>
<td></td>
<td>engineering firm before</td>
<td>currencies</td>
</tr>
<tr>
<td></td>
<td>implementation in Jordan.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(2) None for consultation,</td>
<td>(4) Unbound, except as</td>
</tr>
<tr>
<td></td>
<td>planning or design services.</td>
<td>indicated in the horizontal</td>
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<tr>
<td></td>
<td>However, all engineering</td>
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<td></td>
<td>designs and plans must be</td>
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<tr>
<td></td>
<td>undersigned by a local</td>
<td>(3) Subject to 50% foreign</td>
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<tr>
<td></td>
<td>engineering firm before</td>
<td>equity limitation. Also, at least</td>
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<tr>
<td></td>
<td>implementation in Jordan.</td>
<td>50% of equity must be held by</td>
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<td></td>
<td>(3) Subject to 50% foreign</td>
<td>engineers. Otherwise, non-</td>
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<td></td>
<td>equity limitation. Also,</td>
<td>Jordanian engineering and</td>
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<td></td>
<td>at least 50% of equity must</td>
<td>architectural firms may provide</td>
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<tr>
<td></td>
<td>be held by engineers.</td>
<td>services only through a</td>
</tr>
<tr>
<td></td>
<td>Otherwise, non-Jordanian</td>
<td>contractual association with</td>
</tr>
<tr>
<td></td>
<td>engineering and architectural firms may provide services only through a contractual association with Jordanian firms for the purpose of implementing a specific project or tender.</td>
<td>services only through a contractual association with Jordanian firms for the purpose of implementing a specific project or tender.</td>
</tr>
<tr>
<td></td>
<td>Architects, engineers,</td>
<td>Architects, engineers, urban</td>
</tr>
<tr>
<td></td>
<td>urban planners and landscape</td>
<td>planners and landscape architects must be Jordanian nationals</td>
</tr>
<tr>
<td></td>
<td>architects must be</td>
<td>(4) Unbound, except as</td>
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<tr>
<td></td>
<td>Jordanian nationals</td>
<td>indicated in the horizontal</td>
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<td></td>
<td>(4) Unbound, except as</td>
<td>section.</td>
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<td>as indicated in the</td>
<td>(4) Unbound, except as</td>
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<td>horizontal section.</td>
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<td>(4) Unbound, except as</td>
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<td>as indicated in the horizontal</td>
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<tr>
<td>Modes of supply:</td>
<td>1) Cross-Border supply</td>
<td>2) Consumption abroad</td>
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<tr>
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</tr>
<tr>
<td>Sector or sub sector</td>
<td>Limitation on market access</td>
<td>Limitation on national treatment</td>
</tr>
<tr>
<td>e) Engineering services (CPC 8672)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jordan</td>
<td>Qatar</td>
</tr>
<tr>
<td>(1) None for consultation, planning or design services. However, all engineering designs and plans must be undersigned by a local engineering firm before implementation in Jordan.</td>
<td>(1) None</td>
<td>(1) None</td>
</tr>
<tr>
<td>(2) None for consultation, planning or design services. However, all engineering designs and plans must be undersigned by a local engineering firm before implementation in Jordan.</td>
<td>(2) None</td>
<td>(2) None</td>
</tr>
<tr>
<td>(3) Subject to 50% foreign equity limitation. Also, at least 50% of equity must be held by engineers. Otherwise, non-Jordanian engineering and architectural firms may provide services only through a contractual association with Jordanian firms for the purpose of implementing a specific project or tender. Architects, engineers, urban planners and landscape architects must be Jordanian nationals.</td>
<td>(3) None</td>
<td>(3) None</td>
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<td>(4) Unbound, except as indicated in the horizontal section</td>
<td>(4) Unbound, except as indicated in the horizontal section</td>
<td>(4) Unbound, except as indicated in the horizontal section</td>
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<td>(1) None</td>
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<td>(2) None</td>
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<td>(3) None</td>
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<td>(4) Unbound, except as indicated in the horizontal section</td>
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<td>(4) Unbound, except as indicated in the horizontal section</td>
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</tbody>
</table>

Envision Consulting Group (EnConsult)  
Construction & A/E Services Benchmarking Study
<table>
<thead>
<tr>
<th>Modes of supply:</th>
<th>1) Cross-Border supply</th>
<th>2) Consumption abroad</th>
<th>3) Commercial presence</th>
<th>4) Presence of natural person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sector or sub sector</td>
<td>Limitation on market access</td>
<td>Limitation on national treatment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jordan</td>
<td>Qatar</td>
<td>Saudi Arabia</td>
<td>UAE</td>
<td>Jordan</td>
</tr>
<tr>
<td>1) Integrated engineering services (CPC 8673)</td>
<td>(1) None</td>
<td>(2) None</td>
<td>(3) Foreign equity limited to 75%</td>
<td>(4) Unbound, except as indicated in the horizontal section</td>
</tr>
<tr>
<td>2) Urban planning and landscape architectural services (CPC 8674)</td>
<td>(1) None for consultation, planning or design services. However, all engineering designs and plans must be undersigned by a local engineering firm before implementation in Jordan. (2) None for consultation, planning or design services. However, all engineering designs and plans must be undersigned by a local engineering firm before implementation in Jordan. (3) Subject to 50% foreign equity limitation. Also, at least 50% of equity must be held by engineers. Otherwise, non-Jordanian engineering and architectural firms may provide services only</td>
<td>(1) None</td>
<td>(2) None</td>
<td>(3) Foreign equity limited to 75%</td>
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<td></td>
<td>(1) None</td>
<td>(2) None</td>
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<td>(4) Unbound, except as indicated in the horizontal section</td>
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<td>(1) None</td>
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<tr>
<td>Modes of supply</td>
<td>1) Cross-Border supply</td>
<td>2) Consumption abroad</td>
<td>3) Commercial presence</td>
<td>4) Presence of natural person</td>
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<tr>
<td>Sector or sub sector</td>
<td>Limitation on market access</td>
<td>Limitation on national treatment</td>
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<tr>
<td>3. Construction and related engineering services</td>
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<tr>
<td>A. General Construction Work for buildings (CPC 512)</td>
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<tr>
<td>B. General Construction Work for Civil Engineering (CPC 513)</td>
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<tr>
<td>C. Installation and Assembly Work (CPC 14 + 516)</td>
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<tr>
<td>D. Building Completion and Finishing Work (CPC 517)</td>
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<tr>
<td>Jordan</td>
<td>Qatar</td>
<td>Saudi Arabia</td>
<td>UAE</td>
<td>Jordan</td>
</tr>
<tr>
<td>1) Unbound</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>1) Unbound* except for consultancy and advisory related services</td>
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<td>2) None</td>
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<td>2) None</td>
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<tr>
<td>3) Foreign equity in Jordanian construction and contracting firms is limited to 50%. Otherwise, non-Jordanian construction and contracting firms may provide services only through a contractual association with Jordanian firms for the purpose of implementing a specific project or tender. 4) Unbound, except as indicated in the horizontal section. The number of foreign engineers to be employed by a firm may not exceed twice the number of qualified Jordanian engineers employed by the same firm.</td>
<td>3) None</td>
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<td>4) Unbound, except as indicated in the horizontal section</td>
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<td>4) Unbound, except as indicated in the horizontal section</td>
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<tr>
<td>1) Unbound* except for consultancy and advisory related services</td>
<td>1) Unbound* except for consultancy and advisory related services</td>
<td>1) Unbound* except for consultancy and advisory related services</td>
<td>1) Unbound* except for consultancy and advisory related services</td>
<td>1) Unbound* except for consultancy and advisory related services</td>
</tr>
</tbody>
</table>

*Unbound means that there is no limit on foreign ownership.
<table>
<thead>
<tr>
<th>Sector or sub sector</th>
<th>Limitation on market access</th>
<th>Limitation on national treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jordan</td>
<td>Qatar</td>
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<tr>
<td>E. Other</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(CPC 511, 515, 518)</td>
<td></td>
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</tr>
<tr>
<td></td>
<td>* excluding site preparation work for mining (CPC 5115)</td>
<td>1) Unbound* except for consultancy and advisory related services (2) None (3) None (4) Unbound, except as indicated in the horizontal section</td>
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</table>

1) Unbound* except for consultancy and advisory related services (2) None (3) None (4) Unbound, except as indicated in the horizontal section

Source: [www.wto.org](http://www.wto.org), independent country reports
Despite the huge potential of the global market, the smaller Jordanian A/E firms will not, however, be able to take full advantage of export opportunities since they lack the necessary capacity to do so. These firms may, however, be able to export as part of a local team of companies, or in joint-venture with an international firm.\(^{142}\)

### 7.0. SWOT Analysis

The A/E services sub sector is intertwined with the construction sector in Jordan and significantly contributes to both local and export markets; the Construction sub sector is a major contributor to Jordan's GDP. However, like any other sector they have strengths and weaknesses, opportunities and threats, the most important of which are listed below. The information presented in the SWOT below was obtained from meetings with JEA and JCCA members and private sector firms that participate in the sectors.

#### Strengths
- Jordan is a highly literate and well educated country with a literacy rate of around 90%\(^{143}\) and possesses around 70,000 engineers\(^{144}\).
- Growth in A/E sector engineers has been consistent and hence there is a continuous supply of engineers from Jordanian and other universities\(^{145}\).
- Local firms have accomplished admirably in regional and international markets boasting two Aga Khan awarded architects and winners of numerous local, regional and international awards such as the ACEC award for excellence and the Organization of Arab Cities award, to name a few.\(^{146,147,148,149}\)
- The sector currently exports its services to more than 30 countries
- The A/E sector is one of ten sectors identified by the JV2020 initiative to drive Jordanian economic growth through increased GDP and to drive Jordan forward towards becoming a knowledge based economy\(^{150}\).
- Alliances can, have and are continuously being formed within both the A/E and construction sectors on projects and in some cases leading to partnerships with international firms.
- Establishing a company in Jordan is easy compared to other Middle East and North Africa (MENA) countries (14 days vs. 23.5 days, OECD 13.4 days)\(^{151}\).
- Jordan is a politically and economically stable country. Moreover, it is a peaceful and welcoming country in a very volatile region.

#### Weaknesses
- The engineering sector is still considered protected by the regulations of the JEA which does not allow foreign firms to operate in Jordan without a Jordanian counterpart. This is considered a weakness from an international stand point, but many local firms consider this a necessity for the sector to flourish without competition from abroad.

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\(^{142}\) A/E Sector strategic development for JV2020, Structure Consulting, December 2004
\(^{143}\) https://www.cia.gov/library/publications/the-world-factbook/print/jo.html
\(^{144}\) 2007 Annual report, JEA
\(^{145}\) 2007 Annual report, JEA
\(^{147}\) http://www.ccjo.com/Corporate/Awards/tabid/81/Default.aspx
\(^{148}\) http://www.aj.com.jo/about_awards.htm
\(^{149}\) http://www.aeb-council.org/UI/English/Members.aspx?ContentId=4
\(^{151}\) http://www.doingbusiness.org/ExploreTopics/StartingBusiness/
The control of the A/E profession by the JEA is considered by many firms to have a negative impact on the ease of operating, issues like work distribution and JEA certification of drawings even in areas where firms know the JEA does not have any experience or expertise has always been considered a negative aspect within the sector.

The JEA/JCCA are not excellence driven and supported organizations. Hence as the bodies responsible for the sector, they have fallen short on delivering continuous educational and standards development services. Although JEA has a training center, the level of training needed by the more experienced companies is not offered.

Due to the historical development of projects in Jordan, there is still a lack of specialized engineers and architects in areas such as high rise building and large scale development.

Poor access to finance; given that the half of the sector's firms are small in size

Small local market and hence the importance of exporting for the sustainability of the sector.

Low level of managerial and technical sophistication in most of the sector due to the small size of firms and offices.

The lack of semi skilled workers and the reliance on foreign labor while Jordanians remain unemployed. This is due to the fact that Jordanians have not accepted getting low wages for back-breaking menial work.

The tribal backbone of many Jordanians who believe it is beneath them to work as laborers especially in the construction sector.

Opportunities

The large number of Jordanian firms and offices in the A/E services and construction sub sectors may be able to increase local competitiveness and quality through mergers and acquisitions. The current percentage of around 50% Engineer Offices and low qualification contractor companies can change into larger more capable firms and companies.

Jordan witnessed a real estate development boom and the entrance of international firms to work with Jordanian firms is increasing the capabilities of Jordanian firms and consequently increasing the local managerial and technical skill level. This applies to both A/E services and construction sub sectors.

Jordanian projects and complexities are improving. Accordingly, Jordanian companies can attract Jordanian engineers and professionals who are working in Gulf through offering better remuneration packages.

The continuous supply of engineers into the field from Jordanian universities can act as a leading support factor to increase the possibility of growth within the sector. This however, should be balanced with the possible restructuring of the sector to create more large scale companies employing 100+ engineers.

Accessibility of information and knowledge via the internet is becoming a major educational opportunity for increasing the skill level of the sector and training fresh graduates immediately upon employment.

The bi-lingual capability of Jordanian society improves the possibility of communication with the world without the need for a translator. This makes Jordan a more welcoming country for possible investment and development.

The reputation of Jordanian engineers in the Arab World is still a great marketing tool for Jordan and the sector.
- Removal of professional/owner requirement of the JEA. A person can own an engineering firm and hire engineers to operate it. He/she herself does not have to be an engineer.

**Threats**
- The size of the local market remains a threat as more engineers seek better opportunities in the Gulf.
- The cost of living in Jordan has been increasing dramatically and Amman is now one of the most expensive cities to live in. This entails that salaries have to be increased to keep skilled staff in house.
- The cost of land has also dramatically increased from the levels of 2004/2005. A square meter in the influential area of Abdoun which was valued at 200 – 250 JD in 2004/2005 sky rocketed to 400 JD in 2006 to reach 600 – 800 JD in 2008.
- Jordan is unable to entice Jordanian ex-pats to come back from the Gulf and work in Jordan.
- Limited funds are being spent on R&D due to low revenues and small profit margins.
- No nationally accredited standard of excellence has been developed for the laborers and semiskilled laborers sector.
- The government tenders and engineering qualification instructions that work against competition and market development. The Qualification system works with engineering firms and not individual offices. Accordingly the need for having two specializations leads to the use of low quality engineers just to be qualified for entering Government tenders. The result is low quality work by low grade offices.
- The abundance of small offices that hire a minimal number of engineers, provide low quality services and a high level of competition leading to a sector that is price driven.
- The arrival of investment firms with their own internal A/E service firms. This utilizes a loophole in the legislation not to the benefit of local companies.
- Jordanian construction contractors face difficulties in obtaining visas to Gulf countries and certain Arab countries.

**8.0 Opportunity Scan**

The Jordanian and regional markets have been undergoing great real estate development. In Jordan alone, annual Real Estate investment has been around US$ 10 Billion based on Ministry of Public Works and Housing sources. Additionally, the Greater Amman Municipality is finalizing the Amman Master Plan that includes a full land use strategy, high rise strategy, development corridors, Airport Road development plan and intensification strategies. The current market is very ripe for the sector to grow and benefit. Already, international firms have joined with Jordanian firms in the development of some projects as noted earlier in the study. Furthermore, the excellent investment environment in Jordan in terms of legislation, good value real estate prices relative to the Gulf and political stability and safety which was the precursor to the real estate boom in tandem with the availability of huge surplus cash in the Gulf after September 11 and the sky rocketing of oil prices, have all made Jordan a destination for A/E Services.

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Commented [W1]: Not rather a weakness?
Architectural services (CPC 8671), Engineering Services (CPC 8672), Integrated Engineering Services (CPC 8673), Urban Planning and Landscape Architecture (CPC 8674), Construction for Buildings (CPC 512), Construction Work for Civil Engineering (CPC 513), Installation and Assembly Work (CPC 514 & 516) Building completion and Finishing Work (CPC 517) and Other Construction Related Work (CPC 511, 515 & 518) categories have all benefited from the boom in real estate development as well as the new level urban planning taking place in Amman and other cities such as Zarqa, Aqaba and the Dead Sea area. Zarqa attracts urban development and low income housing mega projects and Aqaba and the Dead Sea tourism development. Architectural and Engineering Services (CPC 8671 and 8672), Urban Planning and Landscape Architectural Services firms (CPC 8674) and Building Construction and Construction Work for Civil Engineering firms (CPC 512, 513) have been very busy with projects such as the King Abdullah bin Abdul Aziz City in Zarqa53 and the al-Abdali project54 which is developed on 384,000m2 of land in the heart of Amman: both identify the scale of projects taking place.

Other projects like Al Mada Masterplan and Sanctuary for Jordan Dubai Capital both developed by the local firm Symbiosis Design,55 the Living Wall56, a project by the prestigious Fosters + Partners of the UK in cooperation with the local firm Maisam Architects and Engineers, are clear reflections of the capabilities of local firms. Other landmark projects like the Royal Jordanian Airlines headquarters which was designed by Neilis Torp, will have local giant Arabtech Jardaneh perform all the structural and electro mechanical design services.

These are just a few projects on the map of Jordan that have been developed and are being developed with or by local A/E firms in cooperation with international firms with project ownership held by local and foreign investment companies. Contracting Companies such as Masar Contracting and Mid Contracting have also been busy with projects in the Al-Abdali area. Mid Contracting is a local company with a long standing history in Jordan of working with giants such as Bechtel; Masar Contracting has also been historically joint venturing with Italian companies.

8.1 Sectors, sub-sectors or clusters with employment generation potential and potential to increase national income

The construction cluster includes A/E Services firms as upstream suppliers and construction contractors as down stream implementers. If one looks at the upstream suppliers (CPC 8671, 8672, 8673, 8674), as a result of the current boom the sector is in need of skilled human resources. This translates to the need for Jordanians to fill the gaps of expertise especially in Architectural Services (8671) and Engineering Services (8672).

Studies have been conducted57 that investigated the remuneration packages needed to be paid to Jordanian expatriates living in Dubai to bring them home. The numbers were very favourable towards being able to bring back Jordanian to work on local projects by paying them around 70% of salaries in the UAE.

53 http://www.mawared.jo/alsharq_overview.shtm
54 http://www.mawared.jo/abdali.shtm
55 http://www.symbiosisdesign.com/
The benefit from bringing back experienced locals is two fold. The first is the dissemination of technology and experience to the local engineers from their experience with professionals working outside of the country. The second is the increase in billable time for these companies, which increases the output of the sector.

Another opportunity to increase national income exists. It reflects itself in developing and adopting new technologies in the market. Areas such as BIM and IPD, discussed earlier in this study, are clear venues by which specialists can be developed to become experts in the field. Such levels of expertise are now needed and hence the investment in such can be viable. Moreover, the structure of the sector, with engineer offices accounting for around 50% of the sector, makes it possible for these offices to develop unique value propositions and specializations that complement each other rather than compete with one another and create specialized hubs of excellence that will benefit the sector and increase the variety of solutions provided with increased income as opposed to doing part of the work and sub contracting other parts to foreign companies.

From the point of view of foreign companies who are specialists in unique solutions, Jordan is a viable country with an availability of engineers who are bilingual and who are socially exposed to the global community as there are no serious social barriers between Jordan and the world unlike the situation in countries like Saudi Arabia, where foreign nationals are always viewed as outsiders.

From interviews\textsuperscript{108} with firms in the sector and public sector engineers, the following areas have been indicated as important and are needed for the growth of the sector:

1. 3-Dimensional modelling specialists
2. BIM software specialists
3. Master planning specialists
4. Experienced structural engineers with CAD experience
5. Electro mechanical engineering specialists
6. Supervision experts for large scale projects
7. Project management specialists
8. Architectural project managers
9. Quantity surveyors
10. Experienced architects

Moreover, if one looks at the downstream outputs of the cluster then construction contractors are in dire need of human resources. So much so that the Government of Jordan in tandem with the Jordanian Construction Contractors Association (JCCA), the Jordanian Armed Forces, the Vocational Training Corporation, the Ministry of Labor and the private sector have worked collectively towards the creation of a training and employment firm\textsuperscript{159}.

The model was inaugurated as a royal initiative and the National Training and Employment Company was established to train 30,000+ Jordanian for certification to work in the construction sector. The company has been operational since Q3 2007 and is supporting the construction cluster through supplying it with skilled labourers in all the areas needed by contracting firms.

\textsuperscript{108} Structure Consulting, 2008
\textsuperscript{159} Structure Consulting, 2007
Another group that may also benefit from the sector are those companies and agents that represent leading edge software solutions directed towards the A/E and construction sectors. These companies have an opportunity to sell their products to firms interested in developing their capabilities as long as the sale includes extensive training on the use of the software and the areas where the software will result in an increase in firm productivity. One potential area is BIM as mentioned earlier in this study.

8.2 Identification of investment prospects, joint ventures and export potential

As has been mentioned earlier, the structure of the sector reflects a very high percentage of small and individual firms. The real opportunity that exists is for these individual offices to grow and to consolidate into larger firms. The expectation is that these larger firms will be able to provide a more holistic and comprehensive service and become better and more consistent solution providers to a larger scale and typology of projects. This should lead to more income coming into Jordan from large scale projects executed by capable Jordanian firms and the hiring of increased numbers of engineers to man these projects thereby reducing unemployment.

The current boom has created numerous projects implemented by joint venture. The larger firms represented on the A/E Business Council all participate in joint ventures, some of which with global forces such as Fosters + Partners, Projacs, Saudi Ojer, among others. Accordingly, the potential exists for joint venturing with local A/E firms for the development of projects in Jordan. The same applies to contracting companies in the construction sector.

Moreover, the potential for Jordanian firms to develop joint ventures with foreign firms is another opportunity as many firms already export their services and have been considered models of excellence. The A/E Business Council firms represent the cream of Jordanian firms with whom joint ventures can be done to cooperate on global and international projects. The real benefit is that they are giving world class service and competitive pricing, a combination that should be intoxicatingly exciting for foreign firms.

8.3 Trade in Services potential according to WTO/GATS modes 1-4

- For engineering, architectural and urban planning services, when provided in mode 1 and 2, engineering designs and plans must be undersigned by local engineering firms before implementation.

- For mode 3 and 4, 50% of engineers, architects, urban planners and landscape architects employed by foreign providers must be Jordanian nationals.

- In terms of national treatment, foreign services providers in Jordan (mode 3) must provide managerial and technical training for local employees.

- In architecture, engineering, urban planning and landscape architectural services, Jordan’s commitments on mode 4 of supply are unbound, and therefore open to policy restrictions on the movement of natural persons. The restriction has primarily targeted laborers for the construction and agricultural sectors; it is more relaxed towards professionals and engineers.

Commented [W2]: ?
The benefit for the A/E sector is that foreign nationals can more easily join local firms and depending on their level of expertise will increase the billable hours of the firm and hence its capacity for doing work. The same applies to the construction sector with the addition that local laws on the employment of low skill foreign workers has always been a point of contention between the construction sector and the government. The limitations on obtaining laborers is an issue, especially when unemployment rates are officially stated at 13% but realistically are higher at around 30%.

9.0 Constraints to development

9.1 Constraints to development

Constraints to development in light of the real estate boom are somewhat contradictory in nature. Even though, there are constraints to development that are people, policy and procedurally related. What is meant by “people” is the mindset of Jordanians, by “policy” the legislative system and by “procedure” the application of these systems by the people.

People

People factors are very much related to the traditions and culture of the Jordanian society. The following constraints are the main factors:

- The attitude and work ethic of the local population is somewhat different than that of foreign countries. In countries like Japan the work attitude and ethic is strength, while in Jordan it is a constraint more so for the lower skill levels and laborers. This attitude may not be favorable to foreigners. However, there is an exception to every rule and a gross over generalization is not due, but the fact remains that Jordanian work attitudes are a constraint.
- The cost of living in Jordan and in Amman in particular is very high. This has led to Jordanians demanding higher salaries, a request that has traditionally not been applicable and hence the “brain drain” to the Gulf. Even with Jordanians working in Jordan, the possibility of job jumping is very prevalent especially among young Jordanian males who are under pressure to get a higher salary in order to be able to afford getting married.
- Women remain an untapped source with unemployment among women being very high. According to the 2007 statistics of unemployment published by the Department of Statistics, men in the workplace are 4 times more prevalent than women. This means that women who are 50% of the population are only 25% likely to be employed.

Policy

Policy factors are related to the current legislation and laws governing the sector. The most important constraints are the following:

- The authority of the JEA in controlling the sector has merits and is very much needed. However, some policies need development such as classification and qualification standards. Issues like the square meter quota is a constraint for offices that are developing and gaining recognition manifested through increased work. The JEA is more a governing body and not a sector development body; as a development body it needs improvement.

161 Analytical report on the annual survey of unemployment, Department of Statistics, 2007
Policies in the Ministry of Public Works and Housing relating to the qualification of A/E firms to work on public sector projects has been a highly regarded qualification and one that Jordanian companies pride themselves on having especially that such a qualification system has been respected by countries in the region. However, the system is antiquated and needs modernization in tandem with International best standards. (the Ministry is currently doing that)

The sector is protected from competition by foreign companies by the JEA legislation and policies that stipulate 50% Jordanian ownership. This may have a positive effect in terms of protecting the market from disreputable low cost service providers who may infiltrate the sector from abroad but in essence it has also kept top level global companies from entering the sector and consequently, raising the standard for the entire sector. Removing this protectionist policy is needed in tandem with a clear understanding of the structure of the sector so that unfavorable results that may stem from restriction removal can be mitigated.

Issues of intellectual property protection are not resolved in Jordan and the lack of enforcement of the regulations does not support A/E firms, especially the more creative firms that are developing new materials and hybrids (combination of materials resulting in a new product). As such, the lack of enforcement has a negative effect on invention, innovation and creativity within the sector.

Labor laws and implementation policies as related to foreign labor has always been an issue with contracting companies. The reality of the matter is that Jordan has high unemployment and Jordanians do not want to work in the sector. Current mitigating initiatives are taking place but the fact of the matter remains that the need for low skill labor from Arab countries especially Egypt is still important to the construction sector.

Qualification and classification regulations by the JCCA and the Ministry of Public Works and Housing needs to be updated to conform to international best practices and standards. Issues such as the value of machinery and the capital of construction companies have no real relevance to the ability of the company to operate. Usually machinery can be rented and company capital is a fraction of the size of projects the company is capable of working on.

**Procedures**

Procedural factors include general environmental factors such as infrastructure and communication in addition to the way firms develop themselves and increase their level of sophistication. According to the Global Competitiveness Report, 2006/2007, it is necessary for Jordan to transform itself into a more knowledge based economy: communication, attainment and dissemination of information should all be second nature to Jordanians. Accordingly the most important constraints in this factor are as follows:

- Weak R&D implementation by Jordanian firms results in a lack of knowledge in the latest A/E trends. This generalization has exceptions but very few. To many sector participants, their highest level of educational awareness was reached at university and minimal if any further study or skill development takes place. This lack of initiative by firms has always been linked to the financial realities of low profit and high R&D costs. However, R&D and further learning is more an attitude than a cost. Firms need to understand the value of R&D and further education and the benefit they will gain when they implement R&D policies and programs.

- Low sophistication of most firms because they are primarily offices with an individual engineer and minimal staff. This in turn results in the engineer not thinking strategically or institutionally on issues such as business planning,
development, marketing, costing, pricing, and other factors. Many companies, big or small, know only their financial realities at year end when the auditor brings in the Balance Sheet for the previous year. This lag indicator of the financials will force companies and firms to look backwards after the fact as opposed to looking forward through financial and operational business planning towards growth and development.

- Lack of the presence of high tech information technology infrastructure to support the business environment. This manifests itself in the current low speed of Internet communication. While globally 8 MBit lines (very fast) are the normal speed of Internet communication, Jordanian infrastructure has reached 2 MBit in some, but not in all areas. Internet speed needs to increase and memory allocation has to increase to allow large file transfer between local and foreign clients, especially that Computer Aided Design (CAD) files are horrendously large due to their complication in addition to the expensive cost of memory allocated to websites and emails. Moreover, the cost of communication and internet service provision in Jordan is expensive, especially in the area of hosting of websites. Many companies are opting for hosting their Websites in the US at the cost of 70 JD / year vs. less efficient hosting by local providers at 250 JD/year. IT infrastructure and the internet should be viewed by policy makers as a necessity for development.

- No nationally recognized labor certification program exists through the Vocational Training Corporation (VTC). This needs to be resolved in order to increase the employability of certified laborers and to make these laborers regionally employable and hence support non-economically productive Jordanians to add to Jordanian Gross Domestic Product.

9.2 Recommendations
The following recommendations address the constraints stated above and other limitations placed on the sects are noted in the study:

People
- Raise the awareness of the necessity of developing a more positive work ethic through human resource development plans that link evaluation to attainment and productivity on a national level and not just at a sector level. Agencies such as the A/E Business Council who are drivers of excellence and ethics could be mandated to developing such a system for the sector which could be piloted in the sector to be later applied to all service sectors in Jordan.
- Support legislation that increases female penetration into the job market.
- Improve the labor law to support families rather than single women who eventually have to leave work when they get married. Associations such as the Business and Professional Women – Amman (BPWA) (www.bpwa.jo) could play an instrumental role in such legislative development.
- Increase the need for development as a basis for survival for the Jordanian population. This should be supported by the Government through benefits and exemptions for those companies and individuals that continuously invest in research & Development whether administrative or technical. A joint sector initiative could be developed to manage such an issue with members from the private sector from the A/E and construction sectors and the Ministry of Education and Higher Education, The Ministry of Public Works and Housing, The Ministry of Labor, JEA and JCC.
Policy

- Re-evaluate laws, regulations and codes – governmental and professional that pertain to the sector. This includes the regulations of practicing the engineering profession of JEA, classification regulations of JEA/EOC, ownership and management regulations of the JEA and qualification systems of the Ministry of Public Works and Housing for A/E firms working on public sector projects.
- The Jordan Engineers Association (JEA) and the Engineers Offices Committee are both institutions that should provide increased levels of support for the sector. For instance, the JEA in collaboration with the Engineers Offices Committee should work towards establishing a licensing and accreditation system that will monitor and control the performance of individual engineers as well as firms.
- The JCCA should adopt a more internationally aligned classification system to ensure that local companies are better able to compete with foreign ones especially as the current boom of 2006 has shown that few Jordanian companies are of the level accepted by International A/E firms and real estate development giants.
- The tax system under which A/E service firms currently operate also requires restudy in terms of the percentage of income tax linked to revenue as opposed to net profit.
- Increase the adoption of Intellectual property rights legislation so that designs and creative solutions can be protected and can have value for the creator and initiator of such developments.
- Develop the Vocational Training Corporation to adopt international standards and align itself with developing certifications that are regionally and internationally acceptable to support the development of a qualified and certified Jordanian labor force.

Procedures

- Expand the sphere of interaction and consultation between the private and public sectors to truly create a partnership so that both sectors increase their value to the economy, with the Public sector being the economic facilitator and the private sector being the party responsible for creating economic wealth.
- Redraw attention to the educational sectors and integrating it with the needs of the private sector so as to offer qualification and training material that are needed by the A/E and construction sector. This could be championed by the JEA, JCCA and A/E Business Council.
- JEA should support the dissemination of quality standards and ethics codes developed by the A/E Business Council so that they become the norm in the sector. Develop exam methodology for engineers prior to registration in the JEA.
- Develop a national reward system and international export award for companies that excel in exporting their services. This could be managed by the EOC and the JCCA as part of a framework towards encouraging firms to increase export.
- Contracting companies should increase support of the National Employment and Training Company in order to train and employ the workers towards becoming certified. This Royal initiative has the potential to be a real savior for the construction industry through the supply of qualified and certified labor and as a pilot towards implementing in other industrial sectors.
- Establish R&D support strategies to enhance the current status of R&D. This should be championed by the Ministry of Public Works and Housing in tandem with the JCCA similar to the funds that support employment which is taxed from
the private sector and deposited in the fund of employment and training managed by the Private sector and the Ministry of Labor. Such strategies should include the establishment of an effective planning and communication system to improve information exchange and international expertise transfer through joint ventures. The increased knowledge should go to a National Expert Knowledge database that is available to companies. They should also include the development of innovative construction materials and methods by focusing on resources and technology integration to optimize performance and increase savings. Organizations such as the Royal Scientific Society RSS and Jordanian universities could take part in this aspect, but only as academicians and not leaders. Accordingly, resources should be allocated for these strategies and a program to Increase awareness of the importance of R&D especially through the Government and the JCCA as patrons of the sector to ensure creating a healthier environment from which R&D can develop.
Annex 1: CPC Codes

Architectural, engineering and other technical Services + Construction and Related Engineering Services

Architectural, engineering and other technical Services: CPCprov code 867

I. 8671 - Architectural services

- 86711 - Advisory and pre-design architectural services

[ Assistance, advisory and recommendation services concerning architectural and related matters. Included here are services as undertaking preliminary studies addressing issues such as site philosophy, intent of development, climatic and environmental concerns, occupancy requirements, cost constraints, site selection analysis, design and construction scheduling and any other issues affecting the nature of the design and construction of a project. The provision of these services is not necessarily related to a new construction project. For example, it may consist of advice concerning the means of carrying out maintenance, renovation, restoration or recycling of buildings, or appraisals of the value and quality of buildings or of advice on any other architectural matter. ]

- 86712 – Architectural design services

[ Architectural design services for buildings and other structures. Design services may consist of one or a combination of the following: schematic design services, which consist of determining, with the client, the essential character of the project, defining intent, space requirements, budget limitations and time scheduling; and of preparing sketches including floor plans, site plans and exterior views; design development services, which consist of a more precise illustration of the design concept in terms of siting plan, form, material to be used, structural, mechanical and electrical systems and probable construction costs; final design services, which consist of drawings and written specifications sufficiently detailed for tender submission and construction, and of expert advice to the client at the time of calling for and accepting tenders. ]

- 86713 - Contract administration services

[ Advisory and technical assistance services to the client during the construction phase to ensure that the structure is being erected in conformity with the final drawings and specifications. This involves services provided both in offices and the field, such as construction inspection, preparation of progress reports, issuance of certificates for payments to the contractor, guidance to the client and the contractor in the interpretation of contract documents and any other advice on technical questions that may develop during construction. ]

- 86714 - Combined architectural design and contract administration services

[ Combinations of architectural services utilized on most projects including schematic design, design development, final design and contract administration services. This may include post construction services which consist of the assessment of deficiencies in

Envision Consulting Group (EnConsult) 84 Construction & A/E Services Benchmarking Study
construction and instructions regarding corrective measures to be taken during the 12-month period following the completion of the construction.]

- 86719 - Other architectural services

[All other services requiring the expertise of architects, such as the preparation of promotional material and presentations, preparation of as-built drawings, constant site representation during the construction phase, provision of operating manuals, etc.]

II. 8672 - Engineering services

- 86721 - Advisory and consultative engineering services

[Services included are the undertaking of preparatory technical feasibility studies and project impact studies. Examples are: study of the impact of topography and geology on the design, construction and cost of a road, pipeline or other transportation infrastructure; study of the quality or suitability of materials intended for use in a construction project and the impact on design, construction and cost of using different materials; study of the environmental impact of a project; study of the efficiency gains in production as a result of alternative processes, technology or plant layout. The provision of these services is not necessarily related to a construction project. It may consist, for example, of the appraisal of the structural, mechanical and electrical installations of buildings, of expert testimony in litigation cases, of assistance to government bodies in drafting laws, etc.]

- 86722 - Engineering design services for the construction of foundations and building structures

[Structural engineering design services for the load-bearing framework of residential and commercial, industrial and institutional buildings. Design services consist of one or a combination of the following: preliminary plans, specifications and cost estimates to define the engineering design concept; final plans, specifications and cost estimates, including working drawings, specifications regarding materials to be used, method of installation, time limitations and other specifications necessary for tender submission and construction and expert advice to the client at the time of calling for and accepting tenders; services during the construction phase. Exclusion: Engineering services for buildings if they are an integral part of the engineering design service for a civil work or production plant or facility.]

- 86723 - Engineering design services for mechanical and electrical installations for buildings

[ Mechanical and electrical engineering design services for the power system, lighting system, fire alarm system, communication system and other electrical installations for all types of buildings and/or the heating, ventilating, air conditioning, refrigeration and other mechanical installations for all types of buildings. Design services consist of one or a combination of the following: preliminary plans, specifications and cost estimates to define the engineering design concept; final plans, specifications and cost estimates, including working drawings, specifications regarding materials to be used, method of installation, time limitations and other specifications necessary for tender submission]
and construction and expert advice to the client at the time of calling for and accepting tenders; services during the construction phase.]

- **86724** - Engineering design services for the construction of civil engineering works

[Engineering design services for the construction of civil engineering works, such as bridges and viaducts, dams, catchment basins, retaining walls, irrigation systems, flood control works, tunnels, highways and streets including interchanges and related works, locks, canals, wharves and harbours works, water supply and sanitation works such as water distribution systems, water, sewage, industrial and solid waste treatment plants and other civil engineering projects. Design services consist of one or a combination of the following: preliminary plans, specifications and cost estimates to define the engineering design concept; final plans, specifications and cost estimates, including working drawings, specifications regarding materials to be used, method of installation, time limitations and other specifications necessary for tender submission and construction and expert advice to the client at the time of calling for and accepting tenders; services during the construction phase. Included are engineering design services for buildings if they are an integral part of the engineering design for a civil engineering work.]

- **86725** - Engineering design services for industrial processes and production

[Engineering design services for production processes, procedures and facilities. Included here are design services as they relate to methods of cutting, handling and transporting logs and logging site layout; mine development layout and underground construction, the complete civil, mechanical and electrical mine surface plant installations including hoists, compressors, pumping stations, crushers, conveyors and ore and waste-handling systems; oil and gas recovery procedures, the construction, installation and/or maintenance of drilling equipment, pumping stations, treating and storage facilities and other oil field facilities; materials flows, equipment layout, material handling systems, processes and process control (which may integrate computer technology) for manufacturing plants; special machinery, equipment and instrumentation systems; any other design services for production procedures and facilities. Design services consist of one or a combination of the following: preliminary plans, specifications and cost estimates to define the engineering design concept; final plans, specifications and cost estimates, including working drawings, specifications regarding materials to be used, method of construction and/or installation, time limitations and other specifications necessary for tender submission and construction and expert advice to the client at the time of calling for and accepting tenders; services during the installation phase. Included are engineering design services for buildings if they are an integral part of the engineering design service for a production plant or facility.]

- **86726** - Engineering design services n.e.c.

[Other specialty engineering design services. Included here are acoustical and vibration engineering designs, traffic control systems designs, prototype development and detailed designs for new products and any other specialty engineering design services.]
Exclusion: The aesthetic design of products and the complete design of products which do not require complex engineering (e.g. furniture) are classified in subclass 87907 (Specialty design services).

- **86727** - Other engineering services during the construction and installation phase

[Advisory and technical assistance services to the client during construction to ensure that construction work is in conformity with the final design. This involves services provided both in offices and in the field, such as the review of shop drawings, periodic visits to the site to assess progress and quality of the work, guiding the client and the contractor in the interpretation of contract documents and any other advice on technical questions that may develop during construction.]

- **86729** – Other engineering services

[Engineering services not elsewhere classified. Included here are geotechnical engineering services providing engineers and architects with necessary subsurface information to design various projects; groundwater engineering services including groundwater resources assessment, contamination studies and quality management; corrosion engineering services including inspection, detection and corrosion control programmes; failure investigations and other services requiring the expertise of engineers]

### III. 8673 - Integrated engineering services

- **86731** - Integrated engineering services for transportation infrastructure turnkey projects

[Fully integrated engineering services for the construction of transportation infrastructure turnkey projects. Services included here are planning and pre-investment studies, preliminary and final design, cost estimation, construction scheduling, inspection and acceptance of contract work as well as technical services, such as the selection and training of personnel and the provision of operation and maintenance manuals and any other engineering services provided to the client that form part of an integrated bundle of services for a turnkey project]

- **86732** - Integrated engineering and project management services for water supply and sanitation works turnkey projects

[Fully integrated engineering services for the construction of water supply and sanitation works turnkey projects. Services included here are planning and pre-investment studies, preliminary and final design, cost estimation, construction scheduling, inspection and acceptance of contracts as well as technical services, such as the selection and training of personnel and the provision of operation and maintenance manuals and any other engineering services provided to the client that form part of an integrated bundle of services for a turnkey project.]
[Fully integrated engineering services for the construction of manufacturing facilities turnkey projects. Services included here are planning and pre-investment studies to address issues such as the integration of operations, site selection, pollution and effluent control and capital requirements; all necessary structural, mechanical and electrical design services; production process engineering design services including detailed process flow diagrams, general site and plant arrangement drawings, plant and equipment specifications; tender specifications; construction scheduling inspection and acceptance of work as well as technical services, such as the selection and training of personnel, the provision of operations and maintenance manuals, start-up assistance and any other engineering services that form part of an integrated bundle of services for a turnkey project.]

- 86739 – Integrated engineering services for other turnkey projects

[Fully integrated engineering services for other construction works. Services included here are planning and pre-investment studies, preliminary and final design, cost estimates, construction scheduling, inspection and acceptance of contracts as well as technical services, such as the selection and training of personnel and the provision of operation and maintenance manuals and any other engineering services provided to the client that form part of an integrated bundle of services for a turnkey project.]

IV. 8674 - Urban planning and landscape architectural services

- 86741 - Urban planning services

[Development services of programme regarding land use, site selection, control and utilization, road systems and servicing of land with a view to creating and maintaining systematic, coordinated urban development. ]

- 86742 - Landscape architectural services

[Plan and design services for the aesthetic landscaping of parks, commercial and residential land, etc. This implies preparing site plans, working drawings, specifications and cost estimates for land development, showing ground contours, vegetation to be planted, and facilities such as walks, fences and parking areas. Also included are inspection services of the work during construction]

UNSTATS CPCprov:
Construction and Related Engineering Services: CPCprov code 51

III. General construction work for buildings

- 512 - Construction work for buildings

[Items 5121-5129: one- and two-dwelling, multi-dwelling, warehouses and industrial buildings. Commercial, public entertainment buildings, hotel, restaurant and similar buildings, educational buildings, health buildings, and all other buildings.]

IV. General construction work for civil engineering

- 513 - Construction work for civil engineering

[Items 5131-5139: highways (except elevated highways), streets, roads, railways and airfield runways, bridges, elevated highways, tunnels and subways waterways, harbours, dams and other water works, long distance pipelines, communication and power lines (cables), local pipelines and cables; ancillary works, constructions for mining and manufacturing, constructions for sport and recreation, engineering works n.e.c.]

III. Installation and Assembly Work

- 514 - Assembly and erection of prefabricated
- 516 - Installation work

[Items 5161-5169: Heating, ventilation and air conditioning work, Water plumbing and drain laying work, Gas fitting construction work Electrical work Insulation work (electrical wiring, water, heat, sound) Fencing and railing construction work, Other installation work]

IV. Building completion and finishing work

- 517 - Building completion and finishing work

[Items 5171-5179: Glazing work and window glass installation work, Plastering work, Painting work, Floor and wall tiling work, Other floor laying, wall covering and wall papering work, Wood and metal joinery and carpentry work, Interior fitting decoration work, Ornamentation fitting work, Other building completion and finishing work]

V. Other

- 511 - Pre-erection work at construction sites

[Items 5111-5116: Site investigation work, Demolition work, Site formation and clearance work, Excavating and earthmoving work, Site preparation work for mining, Scaffolding work]
• 515 - Special trade construction work

[Items 5151-5159: Foundation work, incl. pile driving, Water well drilling, Roofing and water proofing, Concrete work, Steel bending and erection (incl. welding), Masonry work, Other special trade construction work]

• 518 - Renting services related to equipment for construction or demolition of buildings or civil engineering works, with operator.
Annex 2: Questionnaire

Construction Sector and A/E Services Sub Sector

Note: Unless specified, please give information for the latest year available and indicate which year. If insufficient space is provided, please attach additional information on separate sheets. Please report all monetary values in their reported currencies.

Within this section of the questionnaire, two concepts will be frequently encountered: commercial presence and cross-border supply. They are alternative modes of supply and are defined by the WTO in the context of the GATS schedules of commitments. To avoid confusion, a preliminary discussion of the two concepts is necessary. Foreign suppliers provide services according to the “cross-border” mode if they operate from their own country without establishing a local branch or subsidiary or acquiring shares in a firm located in the country to which the service is destined. The “commercial presence” mode of supply means exactly the contrary, i.e., the foreign firms establish locally in the country where they want to supply the service and open a branch, subsidiary or participate to the capital of a local firm (the share can go up to 100%).

A. Market Access

Commercial presence

1. Are there policy restrictions to new entry (refer only to commercially-established operators)?

<table>
<thead>
<tr>
<th>Service type</th>
<th>Entry by any firm</th>
<th>If yes, total number of firms allowed</th>
<th>Entry by firms with foreign participation</th>
<th>If yes, number of firms with foreign participation allowed</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□No □Yes</td>
<td>□No □Yes</td>
<td>□No □Yes</td>
<td>□No □Yes</td>
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<td>□No □Yes</td>
<td>□No □Yes</td>
<td>□No □Yes</td>
<td>□No □Yes</td>
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</tbody>
</table>

2. If entry is restricted, what are the reasons provided by the government?

Use the definitions below to fill in the table:

1—To give incumbent operators time to prepare for competition. If so, please specify time given.
2—To increase government revenue from privatization or license fees
3—Exclusive rights believed necessary to attract (strategic) investment. If so, please specify time given.
4—It is believed that market can sustain only a limited number of operators
5—Strategic activity reserved to the state.
6—To protect the industry.

Reasons

---

162 The term commercially-established refers to locally-established operators.

163 This category also includes branches and subsidiaries of foreign suppliers.
### Cross-border supply

3. Are there restrictions on cross-border entry of foreign service providers on the [market]?  
   - [ ] No  
   - [ ] Yes  
   If yes, what are the instruments used to implement restrictions?  
     - [ ] Bilateral agreements specifically related to the sector or agreements where the sector is mentioned therein  
     - [ ] Other: _________________________________________________

4. If entry is restricted, what are the reasons provided by the government?  
   - To prepare incumbent operator(s) for competition: [ ]  
   - Market is believed to sustain a limited number of operator(s): [ ]  
   - To protect the regulated rail industry: [ ]  
   - Others (explain): _________________________________________________

5. Bilateral .... Agreements  
   - Type of bilateral agreements  
   - Number of signed bilateral agreements  
   - Number of operational agreements  
   - Others (please elaborate)

6. Please fill in the following information referring to clauses in operational bilateral agreements:  
   a) Tariff clauses in bilateral agreements  
      - Total number of bilateral road agreements  
      - [ ]  
      - [ ]  
      - [ ]  
      - [ ]  
   - Other mechanism of setting tariffs (please describe in brief)  
     b) Capacity clauses imposed on foreign companies  
        - Total number of bilateral agreements  
        - [ ]  
        - [ ]  
        - [ ]  
        - [ ]  
   - No capacity constraints  
   - Capacity constraints  
   - Number of foreign companies
### B. Ownership

#### 7. Is private ownership in the provision of services through commercial establishment allowed?

<table>
<thead>
<tr>
<th>Services</th>
<th>Existing operators</th>
<th>Maximum private equity permitted (%)</th>
<th>New entrants</th>
<th>Maximum private equity permitted (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ No □ Yes</td>
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<td>□ No □ Yes</td>
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<td>□ No □ Yes</td>
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</tbody>
</table>

#### 8. Does government (national, state or provincial) hold equity stakes in a national business company?

<table>
<thead>
<tr>
<th>Services</th>
<th>Government equity participation</th>
<th>Equity participation (%)</th>
<th>Name of company</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ No □ Yes</td>
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<td>□ No □ Yes</td>
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</tbody>
</table>

8.1 If yes, are there any statutory or other legal limits to the number or proportion of shares that can be acquired by foreign investors in those companies?

<table>
<thead>
<tr>
<th>Services</th>
<th>Foreign equity participation</th>
<th>Foreign Equity participation (%) or number</th>
<th>Name of company</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>□ No □ Yes</td>
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<td>□ No □ Yes</td>
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</tbody>
</table>

8.2 If yes, are there any legal constraints to the sale of the equity held by the government in publicly controlled companies?

<table>
<thead>
<tr>
<th>Legal constraints</th>
</tr>
</thead>
<tbody>
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<td>□ No □ Yes</td>
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<td>□ No □ Yes</td>
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<td>□ No □ Yes</td>
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<td>□ No □ Yes</td>
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</tbody>
</table>

#### 9. Is owner-operators allowed in the in any of the service markets?
### C. Market Structure

10. Please list below the characteristics of all commercially-established companies operating in Jordan.

<table>
<thead>
<tr>
<th>Name</th>
<th>Year company first offered services</th>
<th>Designated to provide international services</th>
<th>Market share National</th>
<th>Market share International</th>
<th>Is the firm federal, state or provincial?</th>
<th>Owners of capital and their respective shares (domestic/foreign)</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td>No ☐ Yes</td>
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<td>No ☐ Yes</td>
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<td>No ☐ Yes</td>
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<td>No ☐ Yes</td>
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</tr>
</tbody>
</table>

11. Do providers participate in informal cartel?

☐ No ☐ Yes

If yes, please describe.

12. Please indicate the total number of foreign companies providing services cross-border:

<table>
<thead>
<tr>
<th>Services</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

13. Please list the characteristics of the 6 most important commercially-established operators for the following services:

<table>
<thead>
<tr>
<th>Name of firm</th>
<th>Year of service commencement</th>
<th>Market share</th>
<th>Owners of capital and their respective shares (domestic/foreign)</th>
</tr>
</thead>
<tbody>
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</tbody>
</table>
### D. Regulation


<table>
<thead>
<tr>
<th>When was the regulator established?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the regulator an institutionally independent agency?(^{164})</td>
</tr>
<tr>
<td>☐ No ☑ Yes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How is the sector regulator financed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>License and other fees (%)</td>
</tr>
<tr>
<td>State budget (%)</td>
</tr>
<tr>
<td>Other (%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How many technical and economic professionals are employed?</th>
</tr>
</thead>
</table>

#### 15. What are the main requirements of companies to operate in the sector?

<table>
<thead>
<tr>
<th>Type of service</th>
<th>Requirements</th>
</tr>
</thead>
</table>

#### 16. Price regulation

a) Does the government or regulatory agency regulate tariffs?
   - On … ☐ No ☑ Yes
   - On … ☐ No ☑ Yes

b) If yes to a), please explain

c) If no to a) how are abuse of monopoly power (cartel) and/or predatory pricing dealt with?

d) Does the government or regulatory agency provide pricing guidelines for some services?
   - Service… ☐ No ☑ Yes
   - Service … ☐ No ☑ Yes
   - etc.

e) Are professional bodies or representative of trade and commercial interests involved in specifying or enforcing pricing guidelines or regulations?
   - On service tariff ☐ No ☑ Yes
   - On service ☐ No ☑ Yes

#### 17. Regulation on entry of new business

\(^{164}\) “Institutionally independent” means that the regulator is not part of the ministry and is not linked to the operating entity.
### 17.1 Licenses

**a)** If the number of providers is not restricted by policy, specify the main conditions new entrants must fulfill:

<table>
<thead>
<tr>
<th>Service</th>
<th>Payment of license or permit fee (indicate amount in local currency)</th>
<th>Obtainment of concession, or franchise by a level of government</th>
<th>Other (describe in brief)</th>
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<tbody>
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</table>

**b)** If the number of providers is limited by policy, through what mechanism are licenses or concessions allocated?

<table>
<thead>
<tr>
<th>Service</th>
<th>Competitive tender</th>
<th>First come, first served</th>
<th>Public hearings</th>
<th>Other discretionary mechanism</th>
<th>Other (describe in brief)</th>
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</thead>
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</tbody>
</table>

**c)** Who does issue license?

<table>
<thead>
<tr>
<th>Service</th>
<th>Government</th>
<th>Regulatory agency</th>
<th>Other (describe in brief)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

**d)** Does the regulator, through licenses or otherwise, have any power to limit industry capacity?  
☐ No  ☑ Yes  

**If the answer is “No”, are any of the following constraints in place?**

- a) complete prohibition
- b) limitations
- c) domestic requirements for government (public procurement)
- d) restrictions on foreign firms
- e) other (please specify)
17.2 Registration

a) Is registration in any register required in order to establish a new business?
- No ☐
- Yes ☐

b) In order to operate nationally, does an operator need to notify any level of government or regulatory agency and wait for approval before the operator start business?
- No ☐
- Yes ☐

If establishing a business in national services is subject to either of the procedures in a) or b) of the previous question, please answer the following questions:

a) are criteria other than technical and financial fitness and compliance with public safety requirements considered in decisions on entry of new operators?
- No ☐
- Yes ☐

b) does an authorisation to operate cover the entire country?
- No ☐
- Yes ☐

c) is the authorisation to operate limited in duration?
- No ☐
- Yes ☐

d) are authorisations to operate transferable?
- No ☐
- Yes ☐

17.3 Do above entry regulations apply to an owner-operator?
- No ☐
- Yes ☐

17.4 Does an authorization (license, permit, concession or franchise) to operate extent to the entire territory of the country?
- No ☐
- Yes ☐

17.5 Is the authorization transferable?
- No ☐
- Yes ☐

17.6 What is the average amount of time that the responsible agency may take to reach a decision about a complete authorization?

_________________________

17.7 How many agencies are involved in examining the authorization?

18. Discrimination between foreign companies and domestic ones.

a) Do foreign firms have the same right to operate in the domestic market as domestic firms?
- No ☐
- Yes ☐

b) If no, are any of the following constraints in place:
   i) complete prohibition ☐ No ☐ Yes
   ii) limitations ☐ No ☐ Yes
   iii) restrictions on the possibility for foreign firms to operate ☐ No ☐ Yes
   iv) Others:

   c) Do foreign companies have social obligations without adequate compensation?
   - No ☐
   - Yes ☐

d) Does the government provide subsidies to domestic companies?
   i) Bus ☐ No ☐ Yes
   ii) Truck ☐ No ☐ Yes

e) Are there any regulations setting conditions for operation periods?

f) Do regulations prevent or constrain any value added services: specify below
   a) …
   b) …
   c) …
   d) …

g) Within the last five years, have laws or regulations removed restrictions on certain services:
   a) …
   b) …
19. Public consultation and transparency
   
a) Which of the following are consulted in advance of regulatory decisions?
   
   - Service providers
   - Consumer groups
   - User industries
   - Other: ___________________

b) How are laws and regulatory decisions made public?
   
   - Published on the regulator’s website
   - Published in an official gazette
   - Other: ___________________

E. Past and Future Changes in Policy

22. Please indicate major changes in market access policies, ownership rules, and regulation since 1990. (e.g., domestic liberalization, implementation of free trade agreements, joining of regional trade agreements, privatization etc.) Please attach copies of laws and regulations, if possible.

<table>
<thead>
<tr>
<th>Area of policy change (market access, ownership or regulation)</th>
<th>Year of change</th>
<th>Description of change</th>
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</thead>
<tbody>
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</table>

23. Please indicate announced or anticipated changes in the same areas.

<table>
<thead>
<tr>
<th>Area of policy change (market access, ownership or regulation)</th>
<th>Anticipated date</th>
<th>Description of change</th>
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<tbody>
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</table>

F. Regional Integration Agreements

24. Please indicate if there are any preferential arrangements affecting …. services, and list the preferential measures.

<table>
<thead>
<tr>
<th>Name of agreement</th>
<th>Partner country(s) in agreement</th>
<th>Date of entry into force</th>
<th>Preferential measures</th>
</tr>
</thead>
<tbody>
<tr>
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</table>
G. Employment

25. Main indicators (for the years 1990-2007).

   How many people are employed by the main national companies? ____________
   How many people are directly employed in the provision of services? ____________
   What share of the total labor force is directly employed in the provision of services? ____________
   What share of workers is employed by foreign-owned operators providing … services? ____________
   What is the annual average wage in this sector? ____________

If available, please attach time series data on these employment indicators separately. If time-series data from 1990 to 2005 is not available, please collect indicators for the years 1990, 1995, 2000 and 2005.

H. Investment

26. Investment indicators (for the years 1990-2005)

<table>
<thead>
<tr>
<th>Service</th>
<th>Total amount of investment</th>
<th>Total amount of foreign direct investment</th>
<th>Total stock of foreign direct investment</th>
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</thead>
<tbody>
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</tbody>
</table>


I. Prices

27. Please fill in the table below. If time series data are available, please attach them separately (preferably electronically).

<table>
<thead>
<tr>
<th>Service</th>
<th>Price (in local currency)</th>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
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</table>

J. Quality and Access to Services

28. Please fill in the following indicators of quality and access to services.

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Value</th>
<th>Date</th>
<th>Comments</th>
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<tbody>
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</tbody>
</table>
K. Innovations
29. Do companies adopt the following technological innovations?

<table>
<thead>
<tr>
<th>Innovations</th>
<th>If yes, how many companies out of ten major ones adopt it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Technological related innovations.</td>
<td></td>
</tr>
<tr>
<td>☐ Improved computer systems and administrative controls</td>
<td></td>
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<tr>
<td>☐ Improved systems</td>
<td></td>
</tr>
<tr>
<td>☐ Improved facilities</td>
<td></td>
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<tr>
<td>☐ Internet</td>
<td></td>
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</tbody>
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Please, provide the name and contact information of the respondent of this questionnaire, or of a specialist from whom we can obtain clarifications if necessary.

Name __________________________________________ Telephone __________________________ Fax __________________________
E-mail address: __________________________________________

_________________________