

CHALLENGES TO ENGINEERING CONSULTANCY SECTOR IN PAKISTAN DUE TO GLOBALIZATION

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1. Introduction

Engineering Consultancy Services encompass the independent performance of engineering related study, preparation of reports, making design, supervision of construction and similar advisory activities in the engineering disciplines in conformity with generally accepted professional techniques and sound management practices. These are knowledge based inputs of human intellect which contribute to the development of societies and nations.

2. Development of Engineering Consultancy Business in Pakistan

Many engineering consultancy firms have been established in private and public sector in Pakistan in the last 30 years. They render professional services solely or in joint ventures. These firms have provided consultancy services for various major engineering projects. Today, there are more than 500 independent Consulting Houses and more than 100,000 registered professional engineers in Pakistan.

3. Role of Domestic Consultants in Implementation of Major Projects

After creation of indigenous Consultancy Houses, local Consultants have played key role in the implementation of major foreign funded development projects in Pakistan such as Chashma Right Bank Irrigation Project, Ghazi-Barotha Hydropower Project, Swabi SCARP, Pehur High Level Canal Project, Fordwah Eastern Sadiqia (South) Drainage and Canal Lining Projects, Motorways, Farm to Market Roads and On-Farm Water Management Projects. About 70-85 percent of the man-months required for planning, designing and construction supervision of these projects have been provided by the local Consultants. Consequently, millions in foreign exchange have been saved due to the services provided by local Consultants which otherwise would have to be paid to foreign Consultants at about 10 times the cost of their services.

4. Establishment of Pakistan Engineering Council

Pakistan Engineering Council (PEC) was formed as a statutory body in 1976 by the Government of Pakistan to regulate the engineering profession in the country. Besides regulating the services of the engineering profession in general, the Council plays a vital role in stream-lining the performance of the Consulting engineers in Pakistan. For registration of Consulting Engineers, there is a Committee to issue license to practice. The Consulting Engineers are registered as individuals and as firms or companies with minimum of a five-year experience. The license specifies the valid

fields of engineering to be practiced in accordance with PEC Acts & Bye-Laws and Regulations for Consulting Engineers. PEC interalia performs the following regulatory functions in addition to registration and licensing:

- Procedures and criteria for appointing of Consulting Engineers;
- Criteria for fixation of minimum consultancy remuneration and methods of payment;
- Formation and issuance of Code of Conduct and Professional Ethics;
- Investigating complaints against Consulting Engineers or Clients;
- Fixing penalties for misconduct;
- Imposing limitations on the appointment of expatriate consultants in the fields where local expertise exists in the country;
- Preparing country's specific Bidding and Contracting Documents; and
- Encouraging Development of various competencies through Continuing Professional Development (CPD).

5. Establishment of National Engineering Services Pakistan (Pvt.) Ltd.

National Engineering Services Pakistan (Pvt.) Ltd. (NESPAK) is Pakistan's premier engineering consultancy firm which was established in the year 1973. It is an autonomous body working under administrative control of Ministry of Water and Power, Government of Pakistan and provides engineering consultancy services in almost all disciplines of engineering.

In the year 2007-2008, the number of foreign projects undertaken by NESPAK was 20. Remuneration received against these foreign projects was about US\$ 24.430 million forming 27% of the total NESPAK revenue of US\$ 88.340 million of this year. The countries where projects have been acquired since its beginning by NESPAK include Afghanistan, Bangladesh, Iran, Libya, Oman, Qatar, Saudi Arabia, United Arab Emirates and Iraq.

6. Association of Consulting Engineers of Pakistan (ACEP)

Association of Consulting Engineers of Pakistan (ACEP) is the representative body of all Consulting Engineering Firms in Pakistan having its registered office in Karachi. The President of ACEP is the Managing Director of NESPAK. ACEP, being an associate member of FIDIC, which is the world's leading federation of consulting engineers, has the honor of presenting Pakistan's potential in engineering consultancy sector at the international platform.

Some of the main objectives of ACEP include:

- To promote common interests of the members and development of consulting engineers;
- Continued coordination with PEC to streamline issues as encountered;
- Defining and maintaining a code of ethics;
- Development of members' technical skills;

- Struggle for adequate compensation against rendering of services;
- Promote fraternity among members, particularly public and private sectors.

Under the management of Technical Consultancy Development Program for Asia and the Pacific (TCDPAP), ACEP is working for better professional environment in Pakistan by promoting culture of engineering consultancy services in Pakistan.

It is recognized that the services sector is the major contributor to the Gross Domestic Product (GDP) of the country and consultancy is a strong instrument for developing national economy. TCDPAP plays an effective role in the promotions of consulting profession and is instrumental in resolving problems inherent in the consultancy industry in Asia and the Pacific region in addition to promoting collaboration and global partnership among the industry members.

7. Methods Involved in Procurement of Engineering Consultancy Services

The International Federation of Consulting Engineers (FIDIC) recognizes that the work of the consulting engineering industry is critical in achieving sustainable development of society and environment. The selection of a consulting engineer is one of the most important decisions a client will make in completing a project successfully.

There are two major systems for selection of Engineering Consulting firms, namely, "Quality- and Cost-Based Selection" (QCBS) and "Quality Based Selection" (QBS). QBS considers the quality/qualifications as the sole criteria for selection of Engineering Consulting firms. Among these systems, the QCBS system for selection of Engineering Consulting firms involves both quality/qualifications of a firm and cost as well. World Bank promotes QCBS as the most commonly recommended method. Asian Development Bank and Pakistan Engineering Council (PEC) also follow the same system of selection.

World Bank, however, does not consider QCBS as the most appropriate method of selection for all cases. For complex or highly specialized assignments for which it is difficult to define precise TOR and the required input from the consultants, and for which the client expects the consultants to demonstrate innovation in their proposals, World Bank recommends QBS as the most appropriate method for selection of Consultants. The International Federation of Consulting Engineers (FIDIC) encourages to promote the concept of QBS. The vast majority of the individual States in the USA also require the QBS system for consulting services. From among numerous countries, departments and professional organizations, the government of Japan also advocates QBS for consulting services.

7.1 Advantages of QBS

- Cost effective problem solving and high quality design can only be achieved with competence and experience. The QBS process, a time-proven method, helps clients find qualified design consultants for their projects.
- Following this simple method, consultants are selected first on competence, creativity and performance and second on negotiation of a fair and

reasonable price. QBS help a client access the most valuable assets the professional has to offer, i.e., creativity and professional judgment.

- Cheap design is expensive. The investment in quality design will enable the most qualified consultant to apply technical knowledge and relevant project experience to develop a functional and cost-effective facility designed to meet the needs of the project.
- Top-quality consultants bring best practices to the project. This translates into the best possible solutions for the client and the end user; which means the appropriate technology, innovative solutions and the lowest life cycle cost. Investing in quality design services at the outset of the project often results in long-term savings.
- QBS improves value. It benefits both client and the consulting firm by encouraging creativity, alternative options and innovation that improves function and could decrease total cost of the project.
- QBS process encourages consultants to continually improve their skills and strive for creativity and innovation because their selection depends on it.
- QBS develops a successful and cooperative relationship between the client and the consulting firm.

7.2 Challenges Posed to Asian and Pacific Consultants due to Globalization

The challenges posed by QBS in fact lie in its advantages. In order to be rated/selected as the highest qualified consulting firm(s) based on qualifications specific to the project needs, the consulting firms need to attain the highest possible competencies in the field. Creativity, innovation and professional judgment, considered to be the most valuable attribute in assessment of QBS proposals, demand for a very high level of competence.

The clients would normally prefer to entrust simpler and smaller projects to local consultants. The process used for selection of Consulting Engineers is normally QCBS; which brings good competition among the local consultants.

When it comes to large and complex projects involving non-customary, unconventional, state-of-the-art technology and innovative approach, clients are shy to bank fully on the local consultants. Additionally, for such projects, generally, international funding is required. Funding agencies would normally limit the selection process to QBS; where International Consultants are expected to score high in their Quality/Qualification based ratings. The situation demands that the Consultants in Asia Pacific countries need to develop and continuously enhance their Qualifications upon which Quality of their proposals will most of the times depend.

It may also be appreciated that Continuing Professional Development (CPD) for the purpose of attaining state-of-the-art competencies leads to a substantial increase in recurring expenditure, at consultant's end. This, in turn, would require adequate fees as expected in the business acquired through QBS.

8. Future Challenges for Engineering Consultants

In almost all the Asian and Pacific countries, national consultants are playing a major role in planning, designing, supervision, and operation & maintenance of the major projects of their countries. Nevertheless, the rapidly changing trends in technical and economic fields demand drastic changes in the traditional sphere of activities of the Consulting Engineers. Arranging financing, contracting and project management practices open new avenues in the field for consulting engineers, who may have to widen the scope of their services. Some of these are mentioned below:

8.1 Liberalized Global Marketplace

In the environment of General Agreement on Trade Services (GATS) under the jurisdiction of World Trade Organization (WTO), there is a big challenge to the survival of the consulting engineering industry in Asia and Pacific Region. A recent marriage between two giant American Consulting Engineering Firms, World number-1, Montgomery-Watson and Harza Engineering Company (MWH) and World number-2, Black and Veatch of USA with Binnie and Partners of U.K., give a message how the Consulting Engineers of that part of the World are preparing to face the future challenges.

8.2 Movement of Natural Persons

One of the greatest challenges under GATS is the restrictions on movement of Natural Persons to the developed countries in rendering professional services. Engineering degree from Pakistani universities, although, are accepted by the developed countries as equivalent for the purpose of higher education; for their movement to developed countries they are restricted unless they further pursue with additional tests/ qualifications from their designated institutions.

This challenge can be acknowledged by encouraging Continuing Professional Development (CPD), on-job training, professional exchange programs, Qualification Equivalence understanding between developed and developing countries and improved networking along with technical collaboration for acquiring better competitive state-of-the-art competencies. Pakistan Engineering Council (PEC) has taken an initiative for continuing education and has implemented CPD bye-laws through a Statutory Regulatory Order (SRO).

9. Recommendations

In view of the rapid growth in the field of engineering consultancy services and with the aim to compete internationally, it is need of the time for Pakistani Consulting Firms to make radical improvements in the field of engineering consultancy services. Pakistan Engineering Council (PEC), in this regard; is endeavoring in consultations with all stakeholders, to frame out some standards in the procurement of the services and works as well on the pattern of the major funding agencies like World Bank, etc.

The only way to counter the challenges posed by Globalization is to invest in the emerging competencies coming up in the consultancy sector. This may be achieved efficiently by taking the following measures.

- Promote and encourage QBS as the major system for selection of Engineering Consulting Firms. In this regard national bodies regulating the engineering profession may be convinced to introduce QBS-based Request for Proposal (RFP) standard documents.
- International donors and funding agencies may be persuaded to use QBS as the primary system for selection of consultants, through TCDPAP and at the level of national associations of consulting engineers.
- Implementation of a robust system of Continuing Professional Development (CPD) and on-job-training for developing state-of-the-art competencies.
- Endeavour for internationally acceptable PE qualifications/registration by resorting to Qualification Equivalence so as to facilitate movement of Natural Persons to the developed countries without acquiring/passing additional qualifications/tests.
- Professional Exchange programme under the Umbrella of TCDPAP, ACEP and PEC and all national-level professional associations in the Region.
- Networking of resources of all consultants in the Asia-Pacific Region by improving coordination through national associations of consulting engineers.
- An improved technical cooperation may help reduce the recurring expenditure on CPD.
- In order to benefit from the opportunities offered by globalization, a regional database may be prepared for identification of suitable Joint Venture Partners, as merger of consulting firms in the region seems to be a remote possibility.