A review on software industry in the Gulf region

Dr. Hasan Yousef Wahba (Associate Professor)
College of Engineering & Information Technology, Al Ain University of Science & Technology, Al Ain, UAE

Abstract: After the software business stopped to be an art and became an engineering business it joined other existing industries and, therefore, it started to have rules, bylaws, quality measurements, reference books and other constraints. Programmers used to have their individual views and personal designs. Program variables, functions, and even data stores (databases) were used to serve a single vertical application. As time passed this type of freedom started to vanish gradually, and people started to form software teams and more complications came about, like using public services where individualities cannot exist. Therefore, programmers started to be more and more constrained.

After the software business became an industry on its own, issues like ethics, copyrights, quality, quality measurements and bylaws started to arise. On the other hand, software engineering experts started to write guidelines to describe how this industry should be practiced. Like all other industries in the world these issues are not comprehensively applied due to several reasons, like, for example lack of competition, lack of expertise and lack of bylaws. In this article I try to shed some light on the software industry in the Gulf region.

Introduction

Evolution and advancement of software industry framework is a multidimensional concept that involves the study of regional socio-economic environment, leadership approach towards the development of the industry, intellectual potential in the region, policies involved in the growth of software industry and deterrence against the theft of intellectual property etc. Gulf region has lately started its march towards an indigenous software industry to stop the drainage of precious resources in terms of software imports and economic growth and stability in the region. This, however, brings with it few challenges that have a considerable impact on the software product itself in particular, and on the software industry in general. The main challenges are the quality of the product, the integrity of the software industry, the availability of the latest technologies and the high quality of the well trained software engineers, and the documentation.

In addition to all these technical challenges there is an extra challenge which comes from the low quality agreements between developers and end users, which leads to legal problems about product expectation, documentation, maintenance etc..

The status of the Gulf software industry

However, the identification of areas where rule driven software industry framework can evolve remains unclear even in developed countries, like Organization for Economic Cooperation and Development (OECD) member states. “There are many problems associated with tracking software imports and exports in trade statistics.” (OECD, 37). These problems include the hazy differentiation between software and software media trade, trade of software being a part of hardware, lack of measuring mechanism for the sale of intellectual property in international market. (OECD, 37). For obvious reasons this obscurity is even graver in gulf region states, who stepped into this industry late in 20th century and most of the software applications are imported from developed countries.

The production and development of software in developed countries have raised serious concerns for the integrity of software industry itself as the bulk productions to realize rapid economic gains has forced deviations from the recommended software development framework and guidelines. Committee on the Offshoring of Engineering (COE, 66) observes, “Scholars conceded that the effects of off-shoring on the quality of work done in developed nations are uncertain because we do not know whether the productivity gains will be captured by the developing countries or the developed countries.”

Quality Assurance

Quality assurance is a core subject of software engineering and this stands true in any region and domain for which the software is being developed. The
deviation from this basic guiding principal of software engineering has surfaced several legal and quality issues in gulf countries. This is especially true for the gulf region where software production is either offshore or in foreign control. “The wealthy Gulf nations have long relied on foreign (mostly American) contractors to build and maintain much of their IT base.” (Carmel, Paul, 24). This over reliance on foreign expertise has given birth to a variety of legal issues in software ownership, legitimate use, quality and maintenance. Redha (n.p) the Business Software Alliance Chair, Gulf Region, while surfacing his concerns on quality and legal issues stressed, “While the region is seeing rapidly growing technological adoption and internet penetration, which is contributing to overall economic growth, we need to ensure that this growth is not compromised through software piracy.”

Factors affecting quality

The quality issues in offshore products are a common observation because of the variance in environment and culture of the software developer and user. COE (197) observes, “When we consider off-shoring, we must remember that there is great variability in software objectives, job types, and practices around the world.” Obviously, this variability may cause quality issue in a region where environment, software quality requirements and job types are considerably different. The fact has instigated a profound realization among Gulf States to develop an indigenous software industry, which can cater local requirement with minimum quality issues and legal breaches.

Efforts to set local software companies

The Gulf States, specially Iran, Saudi Arabia and Syria are now making concentrated efforts to groom local software industry and the commitment of local software companies in the region may achieve better results for growth of software industry. However, the lack of latest technologies and the dearth of software engineers with required skills are two major areas where they face bottlenecks. Still quality can make a difference as UN report reads about Syria, “When high technology including Information and Communication Technology (ICTs) is used appropriately and quality is predominant characteristic of production small enterprises in the region may succeed in exporting their products to developed countries, in spite of many difficulties linked to the environment and the lack of ready-made local expertise.”

Documentation

In most of the software applications produced offshore, the documentation is of low quality, incomplete and in some cases totally missing. Documentation is an important part of software quality assurance and no serious software development effort can afford to take it for granted. Documentation is the third most important consideration in software quality assurance after maturing processes and code measuring. (Nance, James, 108). Language is an important contributor in the production of low quality documentation because developers and technical writers are not acquainted with Arabic language that is predominately used in most part of the gulf region. As a result gulf nations merely get a translated version of popular software. There translated versions have built-in quality issues for obvious reasons. Software translation is a lucrative market for local firms who have contacts with renowned software developers. (Carmel, Paul, 24).

Legal issues

Moreover, there are mismatches in software quality expectations. This may also generate legal complexities if there is no explicit written agreement on the quality and documentation requirements. Usually, there is no clarity on expected quality and specially when the development pace is fast these issues are surfaced once the product is used by the end users. In the absence of legal agreement, there are also misconceptions on legal uses and ownership of the product. Software license period and legal utilizations and documentation are three major quality issues that are faced by the states in gulf region because the most of the application development is carried out without any prior legal agreement. (Longhorn, Victoria & Jeffrey, 36). Because most of the development is offshore, issues of traceability, distributed collaboration, asynchronous communications, linking various software artifacts and visualization of remote user environment are common issues that surround software development for gulf region. (Meyer & Mathai, 190). Therefore, solution of most of the problems that Gulf States face today in software quality and legality can be lessened through
indigenous software development by local developers and experts.

**Works Cited**


