Outsourcing Maintenance Operations to Off-Shore Vendors: Some Lessons from the Field

Sam Ramanujan
Central Missouri State University

Hal Lou
Ohio University

Ever since Eastman Kodak announced that it was outsourcing its information systems (IS) function in 1988 to IBM, DEC and Businessland, large companies have found it acceptable to transfer their IS assets, leases and staff to third party vendors. In the recent past, there is a trend towards selective sourcing in which organizations opt to use third party vendors for certain IS functions which represent 20-60% of the IS budget while still retaining a substantial internal IS department. This paper reports on issues involved in selective sourcing of maintenance operations. In particular, it addresses the issues involved in performance of maintenance services from an off-shore location. These issues are organized using a framework developed based on the knowledge gained from prior research in IS implementation and Socio-Technical approach to studying organizations. A number of lessons that we learned from the X-OIL - OCS case study are also presented.

In the past seven years, issues in globalization of information systems development have become increasingly important for both practitioners and researchers. Research studies in the recent past (e.g., Meadows, 1996; Gibbs, 1994; Palvia, et al., 1992; Deans, et al., 1992; Bartlett, et al., 1990; Schware, 1989; Kim, et al., 1989) provide various reasons for the growth in globalization of software development and maintenance activities. Some of the reasons for globalization of IS activities include 1) technological advances in telecommunications, 2) lower labor (programmer) costs in some nations, 3) greater availability of quality software professionals in some countries and scarcity of such professional in other countries, 4) the ability to split IS functions into parts that can be handled by independent groups without significant loss in efficiency and 5) opportunity to take advantage of the time zone differences between different countries in order to provide round the clock IS support. In this study, we focus our attention on one of the IS functions, maintenance, and describe some of the issues involved in outsourcing the software maintenance operations. In particular, it addresses issues pertaining to outsourcing maintenance to a vendor who provides service from an offshore location.

In October 1993 X-OIL2 engaged Omega Consultancy Services (OCS) for providing maintenance for all its systems. Currently X-OIL’s maintenance is handled by two OCS teams, one based in Madras, India, and the other based in Houston. Two of OCS’s Houston based representatives, Mr. Ray - the project manager for Omega Consultancy Service’s Houston based team, and Mr. Mike - OCS’s Houston based Accounts Manager who interacts with the X-OIL management were interviewed extensively in order to gain an understanding of the X-OIL-OCS collaboration for providing maintenance. This case provides a vendor’s perspective on the issues pertaining to providing offshore maintenance.

Decisions regarding outsourcing significant functions are among the most strategic that can be made by an organization. These decisions address the basic organizational choice of the functions for which internal expertise is developed and nurtured and those for which such expertise is purchased. A wise decision about outsourcing IS depends on having an in-depth understanding of some fundamental factors, including: 1) the overall consequences of any make-or-buy decision, 2)
an explicit understanding of what constitutes core competency, 3) alternatives to outsourcing, and 4) new skills and attitudes that are required for outsourcing (Lacity and Hirschheim 1995).

In the early 90’s X-OIL Oil Corporation decided to reevaluate and reorganize their MIS function. The first step in this process was identifying their core competency areas where they could focus their efforts. They identified some areas in the systems development life cycle where they felt they were getting maximum returns in terms of cost and time from their internal staff. These areas were classified as core competency areas. Four stages in the systems development life cycle, business analysis, logical design, requirement definition, and implementation were classified as their core competency areas. System construction, physical design and maintenance were considered non-core competence areas. X-OIL felt that they would be more competitive by outsourcing these non-core competence areas and assign their professionals from these areas to one of the core-competence functions such as analysis or design.

In order to find a competitive vendor to manage the maintenance of their legacy systems, X-OIL organized a two day vendor conference to explain their objectives. Over fifteen vendors attended this conference and they were introduced to the various systems that they would be expected to maintain. Each vendor was given two days to study the system in order to prepare their proposal. Based on these proposals, the maintenance outsourcing contract was awarded to Omega Consultancy Services (OCS) - an Information Systems consulting firm based in India.

According to OCS’s Account Manager, Mr. Mike, X-OIL decided to award the project to OCS mainly because OCS offered a comprehensive solution to the maintenance problem. In addition to providing a competitive price, they also had a documented methodology that they would follow for providing maintenance and promised to document the existing systems using their automated tool, CASEPACK. In the following sections, we will discuss the X-OIL-OCS project in detail. We will not only describe what is being done in this project but will also discuss some issues that must be resolved before any such arrangements for maintenance are made in future.

**Omega Consultancy Services**

Omega Consultancy Services (OCS) is a division of the giant Indian conglomerate Omega Sons. Omega Sons manufactures a wide variety of products such as automobiles, steel, chemicals, power, computers and process control equipment, and software.

OCS is one of India’s largest software consultancy firms. It employs close to 3000 software engineers and has an annual turnover of Rs. 250 Cr. ($100 million). OCS was formed in 1968 and it has six profit centers within India with offices located in Madras, Bombay, New Delhi, Bangalore, Calcutta and Pune. In addition, they also have many offices in Europe, United States, Middle East, and Australia.

OCS undertakes all kind of projects including turnkey IS projects, software development projects, software maintenance projects and conversion projects. Most of the projects are executed at the client site. However, in the past few years, with the rapid advancement in telecommunications technology, some of the foreign software development projects have been executed from their home base in India. This gives them significant cost savings.

The X-OIL maintenance project is a unique project for OCS since it has both offshore and onshore presence to provide maintenance. In addition, this is the first time OCS Madras is maintaining applications developed by the client. In the words of the project manager:

“Well this is not our first maintenance project. We have done maintenance projects before. But the difference is, till now we have maintained applications which we developed. So this is the first maintenance project of its kind where we are maintaining systems developed by somebody else.” (Ray)

The Accounts Manager adds:

“Offshore development was the first area that we got into. Development was a lot easier than maintenance. And maintenance, from prospective of what we’re doing for X-OIL, help desk kind of activity, was far more difficult to envisage than doing offshore development... In development you have specific cutoff points where you can turn the work over to the offshore site... that, in my opinion is less difficult than maintenance... especially the way we are doing it for X-OIL...” (Mike)

In addition to executing clients projects, OCS also has a Research and Development group that develops productivity enhancing tools for their project teams. For example, they developed an error tracking tool (ECHO) for their maintenance projects and a documentation tool (CASEPACK) for their development projects.

OCS emphasizes continuous training of their professionals to keep them updated with the latest development in the area of systems development. An entry level professional undergoes six months of rigorous class room training prior to being assigned to any project. The following quote highlights their emphasis on training.

“OCS has very good training policy. We strongly believe in keeping our people up to date with technology and the current requirements in market. So we don’t wait until the requirement is there to train a person... we always have on-going training programs which are conducted back in Madras...” (Ray)

**The X-OIL-OCS Maintenance Project**

In late 1993 X-OIL outsourced all its maintenance opera-