The Valuation of Technology-Based Intellectual Property in Off shoring Decisions
Gio Wiederhold, Shirley Tessler, Amar Gupta, David Branson
Summarized by Othmar Mwambe and Naiad Khan

Overview

Offshore outsourcing (aka. offshoring) of software development has extremely increased it's popularity in recent years. Overriding cause of its popularity is cost savings. Some companies are attracted to offshore outsourcing because of potential tax savings. There is an abundance of technically trained developers willing and eager to work for the lower labor rate offshore. Some developers collaborate with offshore development companies to perform software development nearly 24 hours a day due to work being performed in different time zones (e.g. US/India). Though offshoring has several advantages but; it involves some great risks and drawbacks which we are going to discuss later in this summary. An increasing share of the market value of firms appears to derive from their intellectual assets such as Intellectual property (IP), and firms are managing these assets more actively to further enhance their contribution to value creation. Offshoring involves the transfer of these assets through offshored services - which raises the importance of technology licensing markets and IP valuation schemes.

Introduction

In business performance and economic growth Intelectual property (IP), human capital and organisational capabilities play a great role. Intellectual property is the subset of intangibles that can be owned by an enterprise which includes patents, copyrighted documents, trademarks, as well as documents, software, and related knowledge covered by trade secrets. Though Intelectual property is neither physical nor financial object but; it can be valued and maintained.

Evaluation of software intellectual property is a bit complicated due to fact that software is maintained and therefore, it is always receiving some changes during it's life time but several valuation methodologies have been proposed and compared in order to achieve safe and reliable transfer of software IP via offshored services.

Transferring Intellectual Property

The Intellectual property can be transfered accrossing boundaries to any country where it can result into either new international market or new business value. The process of transferring IP to foreign contries is affected by state’s laws and regulations particularly on the issue of security and taxation. Due to this fact IP valuation differs in order to make appropriate tax payments in each country and finally, the concept of IP ownership raises up. The ownership of prior and new IP depends on the contractual arrangements between the sponsor and the service providers, who use that IP but; when the number of participants increases then the situation is becoming more complicated. In order to control this, the host company is set and the ownership of all new
IP is assigned to this host and therefore, the goal of revenue sharing is achieved.

The Role of Technology-based IP & Offshoring

Financial Accounting Standards Board defines technology-based IP as: *patented technology, trade secrets, databases, mask works, software, and unpatented technology*. Software can generate profit by being replicated and sold as products to external parties but; investment in software and information technology assets, alignment of technology assets with business functions and benefits remains a difficult task. Even though most of the time software development cost does not have direct relationship to the benefit that the software may create but; this does not mean that this asset should not be valued. The importance to the enterprise of valuing it’s software IP is the same regardless of how the software is created, sold, or used and it must be valued in order for the company to be able to quantify internal IT investment.

Determining the Best Suited Software Types for Outsourcing

As we stated before that moving software development thousands of miles away is not only enough to save costs but; a company should evaluate the risks and benefits of offshoring and determine which types of development work are more suitable for offshore outsourcing. Good candidates for outsourced development offshore are usually software that is not proprietary to the client company’s core intellectual property.

According to Savitr (http://www.savitr.com/) Software good candidates are:

- Web design and development
- E-Commerce projects (but have a third party check for security)
- Remote software maintenance and feature enhancements
- Internal record keeping, database, help-desk software.

Principles of Software Valuation

Before describing the the methods of valuation, firstly we have tried to describe briefly different software categories which cause valuation process to vary, depending on which category the principle is applied:

**Marketed Software.** Intellectual assets are valued by their contribution to the future income of the business. Therefore the value of software IP being sold is estimated by its expected revenue minus production cost.

**Embedded Software.** Is not yet into practice due to insufficient metrics to capture the IP of embedded software. The allocation of income to software versus the remaining product IP is a difficult issue.

**Internal Use Software.** Businesses depend on internally generated software that is made to order by a vendor. The value of IP cannot be based upon its development cost. The income from business operations now has to be allocated to the software versus other costs of doing business.

**Common Key Attribute.** In order to ensure continued usefulness and applicability, software must be periodically updated so that it remains current.
Methods of Valuation

Direct Assessment of Future Income. The determination of future income requires estimating the income accruing to the IP in each of all future years over its useful life. The estimation of the IP value of marketed software requires estimates of sales volumes over its life; estimates at the unit product level, as the sale price, sales and distribution overhead; and estimates that pertain to the product line, such as marketing costs, likely frequency of future version, and maintenance cost expectations over the life of the software.

Research and Development (R&D) Spill-Over. This valuation method computes the expected income by relying on the leverage of R&D expenses, aggregated over multiple years. The method includes three main parameters: annual investment in R&D, period of investment and leverage ratio of R&D investment on future corporate income.

Real Options (RO) Valuation. RO views investment in IP as an option to develop the current asset depending on the facts and circumstances at option dates. Dates to be considered would be key development, product release, and profitability milestones. This method still requires an income-based valuation but; adds the optional value of flexibility in spending or cancelling R&D costs associated with development therefore, intellectual assets- which that have future income generating ability and currently yielding either zero or negative return then real option, is the perfect choice. It's disadvantage is the myriad of variables inherent in options pricing, leading to heightened risk of improper valuation and pricing audits.

During transfer of software IP make sure to determine the valuation of the software and the value contributed subsequently by maintenance. As we described before, the price of a unit of well-maintained software tends to be stable through most of its life. A steady rate of maintenance will diminish the relative contribution of the prior IP, transferred when the offshoring arrangement organized. We have already described the concept of licencing and IP ownership on obtaining offshored services earlier in our discussion.

Conclusion

When all factors for secure transfer of software IP have been taken into consideration, the risks are analyzed, background checks completed, if the final evaluation indicates that there is significant advantage for moving software development offshore, then, finally, we also want to recommend the followings:

Only offshore to countries with some legal remedies (just incase IP theft occurs).

It is obvious but; put confidentiality agreements in place.

Resist offshoring software development for your company’s proprietary products. Keep core technologies and competencies close to home.

Do what you can to control access to any proprietary documents or software that is created for you. Keep hosting the development server at your location and finally get written agreements about who owns the code that you pay to have developed.