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To better understand the complex world of licensing and enterprise software, consider a driving analogy.

There seem to be so many different ways to buy software products and services these days that people trying to compare the total cost of ownership of competitive products often feel stymied. Is it better to buy a perpetual license to a software product, to pay an annual licensing fee, or even pay on a "per use" basis? These options—and more—are available for many types of software.

Since software is less tangible than other hard goods, it helps to step back and compare purchasing methods for something more familiar—vehicles. The commonalities between how we buy software and transportation can put software options in perspective.

Software companies in many ways are no different than any other companies. They typically spend hundreds of people-years developing a product that will ideally capture market share over their competitors and allow them to operate profitably. The selling models for software vary a great deal, but can be divided into

two: desktop and enterprise system. Although desktop software can be purchased by individuals or companies, only a company would typically consider enterprise software.

Desktop software

People generally buy software for personal use on their desktop. Aside from software that comes installed on a computer, traditionally people purchase "shrink-wrapped" software that comes with a perpetual license. They may buy their software from an office supply store, a computer store, or through the Internet (which may involve a download rather than a CD-ROM).

This perpetual license allows users to use the software as they see fit, although with some limits. The software is often accompanied by the availability of support for a period of time, as well as limited opportunities for upgrades and patches. Each software company has its own combination of these additional services, but the model is relatively common and well known. A product like Microsoft Office or Quicken might fall into this category.

Buying a perpetual license to software is similar to buying a car. The purchaser would own the car outright, and would have a warranty period for repairs and support. Once you buy the car it is yours to do with as you see fit (again within legal limits).

Perpetual licenses and car purchases have a lot of common characteristics. The user's advantage is that the software (or car) is yours. Once you pay for it you won't have to spend money for it again until it has reached the end of its life cycle. The disadvantage is that over time, software (and cars) will be developed that work better, have more functionality, and are more compatible with what other people have on their desks (on in their garages). To take advantage of these features in software, the user will have to

buy another license to a new program.

Very few people would ever think of buying a car without a test drive, sometimes an extended or overnight tryout. This concept has a parallel in individual software purchases with shareware. Many, many high-quality software programs are available via download on the Internet to use for 15–30 days with either full or slightly limited functionality. The user can then choose to buy the program and "unlock" it for a modest fee. This model is attractive to software companies and purchasers alike; it gives the company a chance to show off powerful software and the purchaser an opportunity to test it before buying.

Over time, more and more desktop software has been purchased through a term license, also referred to as a software subscription. With this license, the software may reside on your home computer, but you only have the right to use it for the term of your deal. A good example of this are the antivirus programs. While you can still buy shrink-wrapped antivirus programs, both McAfee and Norton now offer an annual term license to their software. You pay for the license, and the software downloads onto your machine. You must renew when one year is up or forfeit the updated virus definitions, an essential component.

Buying a term license for software is very much like leasing a car. For all practical purposes, the car is yours for the terms of the lease: it stays in your possession and is yours to use. One term software benefit is that the software is automatically upgraded during the lease period—something that unfortunately doesn't happen with leased cars!

The extreme case of car leasing is the car rental. Whether for one day or one week, the car rental is effectively a short-term lease on a car. A new concept of car rental with origins in Europe, "Zip Car" (www.zipcar.com), recently arrived first

in Boston and is now in several major U.S. cities. City dwellers who don't own a car can call Zip Car and rent one of these small, functional cars for a few hours at a time with very little hassle. It is a car "on demand." The equivalent in personal software would be a "pay per use" software program, for instance TurboTax (www.turbotax.com). With this and similar tax programs, you can make use of tax calculation and filing software on a one-time basis when you need it. It is truly "on demand."

I can't leave the world of personal software without discussing open source software. There is no directly comparable metaphor in the world of car buying for open source. Open source software is developed by a community of users who work together to produce a product for their own use. Whether developer or casual user, anyone can use the product as is and has access to the source code. That allows users to expand and improve the product for their own use, or even for sharing with others.

Open source individual software can

be spare or richly featured, but can require a fair amount of tweaking and tolerance for quirky behavior. The best metaphor for open source is an older model car that your parents might have given you for free before you had your first job. It worked as transportation and might even have had some nice features. You could have fixed it up, but it wasn't the same as getting a new car. On the other hand, it usually got you around town—usually.

Corporate and enterprise software

Now that we have covered the world of personal software, it's time to consider the world of corporate and enterprise software. The purposes, value proposition, and buying models of this software are significantly different than personal software.

Certainly corporations buy lots of personal software, especially desktop suites such as Microsoft Office. However, for the purposes of this discussion, we will focus only on enterprise applications for corporate functions, such as customer


relationship management (CRM), enterprise resource planning (ERP), human resources, accounting, and compliance software. This realm also includes clinical data management, clinical trial management, and electronic data capture systems.

When a company buys enterprise software, it is typically making a significant purchase that carries with it a commitment not only for the software, but significant hardware, custom installation, user training, process reengineering, and support. In the past, there was only one major licensing model for buying enterprise software—the perpetual license with an annual maintenance fee, typically 15% to 17% of the original purchase price. The advantages of the perpetual license are the same as for individual users—software that doesn't have to be repurchased in subsequent years.

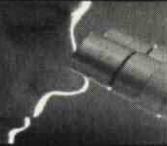
On the other hand, there are many downsides to the perpetual license. The process of evaluating and purchasing a major software solution can be very costly and time-consuming. Often, companies will over-purchase because of inaccurate use forecasting, or worse will pay for software and maintenance for a product for which they then delay or even cancel implementing. The costs of deployment (services and customization) are estimated in a recent Merrill Lynch report at six to eight times the initial software costs. Finally, in-house IT resources become responsible for the business risks associated with the proper functioning of the software. At the end of the product life cycle, the sunk costs of a perpetual license often lead to paralysis when considering an upgrade to newer and more functional software packages.

Purchasing perpetual software is the equivalent of a company buying a corporate jet; a significant initial outlay, and then ongoing maintenance. Most jet-owning companies wouldn't consider maintenance to be a "core competency" (unless they were Boeing, that is) and outsource many of these tasks. Similarly, many corporations will outsource the hosting, integration, and other services needed for perpetually licensed software.

Even the largest corporations today would be hesitant to purchase a jet when there are so many other attractive



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options. Leasing a jet is not dissimilar to leasing a car, except on a grander scale. All of the advantages already discussed accrue—you can “own” the jet, but can upgrade to a newer one each lease period.

The closest equivalent to such a lease in enterprise software is the software subscription model. In this licensing model, the corporation licenses the software for a defined period, often one to several years. Unlike the jet leasing metaphor, here it is generally possible to upgrade the software during, not just at the end of, the lease period. A subscription model often may include a significant amount of the installation/customization services upfront and on an ongoing basis. This type of model will allow maximal flexibility for the corporate buyer, so the buying decision can be reevaluated at the end of every license term. If newer, more functional software has appeared, it can be fully evaluated alongside the existing solution.

There is less of a sunk cost issue in hardware and installation expenses, since the license is an ongoing cost. In addition, the software vendor is going to work hard to provide the best software and service to ensure renewals. One example of subscription-based licensing in the pharmaceutical industry is SAS, with annual term, per-seat licenses.

More recently, the jet market has developed a new model of leasing, called the fractional lease. In this “on demand” model, the corporation buys a “fraction” of a jet. In parallel, the newest model of software licensing is also referred to as “on demand.” The basic concept is that the software is hosted and managed by either the vendor or a third party. There are many different versions of the on-demand model to fit the many different use models of the software itself.

In the most fundamental “on-demand” licensing version, the hosting company manages one or many instances of the software on their own servers. When customers want to use the software, they are using a fraction of the capacity of a shared server. In many cases this might operate similarly to the fractional jet model. For a yearly fee, the customer has access to the software for a given unit of work (which is defined differently for each software application). Any demand that goes over this contracted amount would incur further costs. The software is

offered in the same way that one might buy a utility, such as a telephone service or cable television.

There are many advantages to an on-demand software licensing model. The corporation doesn't have to pay for infrastructure, hardware, installation, and ongoing maintenance costs. These are all taken care of by the software provider. Plus, the customer gets the most up-to-date versions of the software.

Furthermore, the company only pays for the software that they use. There isn't the need to estimate usage in the distant future and buy “ahead of the curve.” Finally, the term or project-based pricing of an on-demand model allows the customer to use the most functional and cost effective software, by virtue of regular re-evaluations.

The model will vary depending upon the type of software being offered “on demand.” Most are metered on a per use basis, but a “use” may vary depending on the application. For a sales force application the meter may be based upon the number of users; for an HR application the meter may count the number of employees. For clinical trials, an on-demand model for electronic data capture may be based on the data item.

Open source software is certainly an emerging force in corporate purchasing as well as in very specific applications. Much of the drive behind corporate open source lies with the Linux operating system. This is especially the case in drug discovery and genomics, where the massive amount of computational power needed often requires clustered servers and many copies of the operating system. Using an open source system can be very cost efficient in this setting, especially coupled with the stability of the Linux operating environment. Web servers and Web site databases are also popular applications for open source software. Despite corporate enthusiasm for these operating system applications, there is far

less use of open source for the typical desktop and enterprise applications that a corporate environment may include. The equivalent of open source software in corporate jet buying/leasing terms is—well, there really isn't one.

Calculating long-term costs

When we purchase software, we evaluate it by many criteria, including functionality, scalability, ease of use, fit to workflow, and cost. In fact, the various models of buying software make the cost evaluation a difficult one in some cases. For enterprise software, it is very important to evaluate the total cost of ownership (TCO) over the entire life cycle of the product. This cost includes license fees, training, support, maintenance, training, hardware, customization, integration, and even end-of-life data migration/archiving.

TCO requires a good understanding of your intended and likely use for the software, and the true amount of your internal costs for ancillary services around the software. It is not unusual for what appears to be the more expensive licensing options to actually have an overall lower TCO. The analysis of TCO should be done for every software purchase and requires a good deal of honest internal appraisal.

Software has become invaluable for personal and corporate productivity. With the maturation of the software industry has come new and creative ways to license software to let customers control costs and maintain business flexibility, while allowing vendors to be profitable.

The proper balance of these factors is essential for the continued industry growth. Regardless of the method of licensing, software has become an integral part of most businesses. In fact, maybe Shakespeare was referring to software in this oft-repeated quote: “that which we call a rose by any other word would smell as sweet.” □

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