

## Build vs. Buy: The Hidden Costs of License Management

WHITE PAPER

In today's dynamic and competitive software business environment, software licensing and management solutions must be flexible.

Today, very few software vendors choose to build their own installation packaging procedures, opting instead to use a commercial solution. The decision to go with one of the readily available installers makes good economic sense. The costs of developing these solutions can result in high total cost of ownership (TCO), because producing and maintaining an effective solution may require ongoing involvement of resources from across the vendor's organization.

The same business considerations apply to software licensing and management. Yet, despite the fact that these solutions may be even more complex and costly than those for installation procedures, many vendors still consider building a homegrown solution to be the most cost-effective option available.

This paper examines the real costs – many of them too often overlooked – involved in the decision to develop a homegrown licensing and protection solution.

### Primarily a Business Decision

The software business environment today is increasingly dynamic and competitive. As a software vendor you require increased flexibility to differentiate your offerings and to respond quickly to changing customer needs. As you expand globally, you may be faced with increasing reliance on indirect channels to grow your business. Additionally, in the face of software piracy threats, it is necessary to find ways to assure and enhance revenues and better control use of your intellectual property. You also need to do this all while preserving margins to retain more profits.

Moving beyond paper licensing to more flexible, software-based licensing is a business decision. There is a growing trend toward a variety of service oriented models – rental, subscription and floating network licenses – that can help you become more competitive by offering your customers more choices. In addition, the ability to tailor packages to meet specific customer needs delivers real value and increased flexibility as you grow your business in more dynamic markets.

Costs of developing a homegrown licensing solution include not only initial development, but up-front planning and ongoing dedication of developers to maintain and update the system.

## Developing the Software is Only the Beginning

On its face, developing a software licensing solution appears to be fairly straight forward. After all, it's mainly a software development project with relatively clear objectives.

In reality, the changing market environment in which most software vendors operate today demands much more complex licensing requirements than ever before. Sales and marketing models are continually changing as competitive pressures and dynamic market trends create new threats and opportunities. Failure to adapt to these changes can seriously impact your competitiveness.

Not only must the solution be robust, it must also provide comprehensive features to enable the flexibility required in today's dynamic markets. This includes the ability to create new licensing models that add inherent value to offerings to deepen penetration and attract new segments. It also means support for new sales and distribution models that will allow you to reach broader markets through both direct and indirect channels, including the Internet.

The solution must support a broad range of functions across the organization and enable them to respond to new opportunities rapidly and without entering into new, costly engineering cycles. Ideally, the solution should separate engineering from all subsequent tasks to enable multiple licensing models based on a single set of binaries that do not require modification after release.

All these requirements mean a much more complex solution than previously associated with software licensing. They further extend the scope of the project to build in expected future requirements (e.g. new platform support), constant modification of the solution to meet changing market dynamics (e.g. new licensing and distribution models), or both. The end result is higher initial costs and ongoing maintenance expenses, particularly for a homegrown solution designed to last years where you may experience engineering turnover without adequate knowledge transfer.

In short, before embarking on – or continuing – a homegrown licensing system, you should look beyond initial development costs to the overall TCO inherent in a comprehensive solution.

**Cost: Up-front planning to make certain that the solution developed will actually meet the organization's needs**

**Cost: Initial development requiring years of development resources to create a robust, comprehensive solution**

**Cost: Ongoing dedication of up to two developers to maintain and update the system and respond to unforeseen market changes**

## Protection – You Can't Buy it by the Slice

Licensing and protection are often viewed as separate, somewhat contradictory, issues. You license to enable use of your products within the terms of agreements with your customers. You protect your products to prevent use outside these terms.

One might reasonably argue that there is an inverse relationship between the level of trust you share with your customers and the degree of protection you require in your licensing solution. So, if I trust my customers "a lot" and just want to enable them to use my products, it might be reasoned, I really only need a "little" protection. In reality, however, it may not be this simple. While you can rate licensing as being more or less complex – based on the range and combination of licensing terms and other features available – defining the "right amount" of protection is an entirely different matter.

Software protection must account for a wide range of customers, and involves recurring costs because it must be constantly updated against new threats.

For this reason, you need to decide up front what level of protection you need. The issue of protection becomes more critical if licensing is being developed to implement new sales and distribution models. Not only must you take into account that you may be selling your products to a wider range of customers, with whom you share varying degrees of trust. The software also assumes a life of its own with distribution methods such as ESD and sales models based on electronic licensing. In these cases, not only do the licenses need to be securely self-enforcing; you also need to ensure your intellectual property against reverse engineering and theft. This requires implementing features such as protective wrapping that might include obfuscation, encryption and a variety of other measures to prevent access to code and reverse engineering. Such features generally rely on specialized skill sets and third-party tools to implement.

When considering whether to build or buy, you must take the costs of protection into account. Not only are these recurring costs that directly impact TCO (protection mechanisms must be constantly updated against new threats). Effective protection requires a specialized skill set that may not be readily available within every software vendor's development team. Acquiring these skills in-house – either through supplementary training or recruitment – can be extremely costly.

**Cost: Training existing developers in security, or recruiting developers with these skills**

**Cost: Continually monitoring, analyzing and creating solutions to meet emerging security needs.**

### Back to Core Competence

For most software publishers, licensing and protection are tools they require to better sell, distribute and protect their products. They usually fall outside the firm's area of core competence. Core competence is what software vendors rely on for maintaining their competitive edge and ensuring a continued flow of revenues.

Deviations from ongoing product development carry costs, although many of these are indirect and often difficult to quantify. Maintaining differentiation with new and improved features is critical to growing business in an increasingly competitive market.

Creating a homegrown licensing solution means deviating from core competence, which generates revenues.

Homegrown licensing and protection solutions often require tradeoffs between developing new product features and capabilities and adapting the licensing solution to changing needs. Failure to plan for the correct balance can imperil individual sales. In the worst case, it can result in losing differentiation – and market share – to competitors.

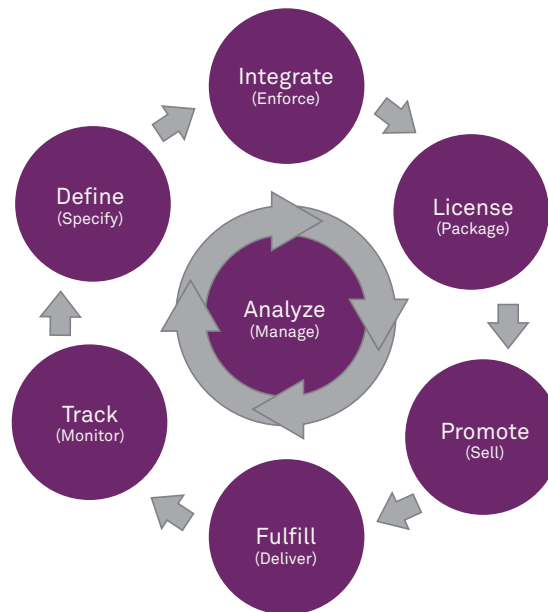
This problem becomes more acute when even relatively subtle changes require initiating a new R&D cycle, because these cycles tend to be among the costliest component in the product's overall lifecycle. Homegrown solutions are often tightly integrated into the product itself. The addition of a new licensing model, for example, may require a full development cycle – from change request, through specification, design review and including QA testing. All this can severely burden development teams, impact roadmaps and draw out time-to-market for new product releases.

**Cost: Diversion of resources from meeting product-related marketing requirements and loss of revenues**

**Cost: Diluted roadmap content and longer time-to-market**

## Meeting the Needs of the Organization

Effective software licensing and protection cut across the entire organization. An efficient solution requires dedicated tools to facilitate each role in the product lifecycle.



At the same time, organizations require high visibility of data concerning licensing and distribution to enable them to monitor and evaluate their business-model implementations. The solution must be designed to integrate both into your organization's existing processes and with its various back-office systems.

A license management system is not entirely different in its scope from ERP and CRM systems. The most significant similarity is how they all touch almost every department in an organization. This is where an in-house system can become problematic.

Each department is constantly seeking tools and processes to optimize productivity. Engineering uses the latest development and sourcing tools, IT adopts a new e-commerce initiative and marketing tries improved business intelligence software. Organizational units may be changing without necessarily communicating changes to one another. An in-house solution that is built to work with current applications can quickly find itself outdated and unusable.

It is virtually impossible to predict how an enterprise is going to change and even more so, how the industry is going to change. Your in-house development efforts will focus on methods with which your programmers are familiar and comfortable. They are not likely to take all the time necessary to design a system that is open-ended enough to scale to new applications or business imperatives.

**Cost: Initial integration with back-office support systems by IT/MIS personnel**

**Cost: Ongoing integration and creation of reporting, and other visibility tools, to meet changing requirements**

## Quantifying the Costs of a Homegrown Solution

With these cost considerations in mind, it is possible to arrive at estimates for homegrown solutions – including ongoing TCO during the solution lifetime..

For purposes of comparison, we have specified requirements for three typical homegrown solutions. We define these as follows:

- Basic (Limited Security). This solution includes one licensing model (perpetual) and relies on simple hashing of a single identifier to lock the license to a machine. The license is checked once each time the user runs the application.

A third party, commercial licensing solution can result in faster time-to-market, in addition to initial cost savings in implementation and lower TCO.

- **Secure Licensing.** This solution provides additional licensing terms (but not concurrency) plus significant security enhancements – both runtime and for IP protection. It is specifically designed for the security conscious ISV. In addition, the solution includes an interface for backend systems such as CRM, ERP and order processing systems.
- **Enterprise Licensing.** This solution adds concurrency support with a variety of enhancements required by enterprise customers, including redundant license servers. Because these are generally highly trusted customers, there is only minimal security.

### Basic Assumptions

We use the following assumptions in arriving at estimates for these three solution costs:

- **Developer Costs.** We use an estimated average base salary of \$84,000 based on median salary figures from the U.S. Bureau of Labor Statistics for software engineers. We then add 50% burden and overhead costs (including bonuses, benefits, equipment, and physical facilities) to arrive at an average developer cost of \$126,000 annually.
- **Opportunity Costs.** We use the average from Software Magazine’s “Top 500” software firms for 2007, which is \$174,622 of gross revenue per employee, assuming that development staff are diverted from the organization’s revenue-generating products.
- **Skill-Set Acquisition.** We use an estimate of \$2,000 per developer, per month for courses, books, journals, study time, etc. required for development staff to complement their skills to include licensing and protection.
- **Total Cost of Ownership (TCO).** We use Gartner Research’s estimate of \$3.40 in TCO costs for every development dollar invested in a custom application. We assume a five-year lifetime for the solution and base the annual TCO calculations on the Developer Costs only (exclusive of Lost Opportunity Costs and Skill-Set Acquisition Costs).
- **Development Effort.** We use estimates (in Developer Months) based on over 20 years of experience in licensing, enforcement and protection of the SafeNet R&D team. These estimates include design, development and testing.

### Homegrown Solution Costs

The following table summarizes the costs involved in implementing and maintaining the typical homegrown solutions over a five-year period:

	Basic (Limited Security)	Secure Licensing	Enterprise Licensing
<b>Initial Development</b>	15.5 Developer Month	39 Developer Months	70 Developer Months
<b>Development Cost</b>	\$163,719	\$411,938	\$739,375
<b>Skill-Set Acquisition</b>	31,000	78,000	140,000
<b>Lost Opportunity Cost</b>	225,553	567,522	1,018,628
<b>Total Initial Cost</b>	<u>\$420,272</u>	<u>\$1,057,459</u>	<u>\$1,898,003</u>
<b>Annual TCO</b>	\$122,916	\$309,272	\$555,104
<b>Lifetime TCO</b>	\$614,580	\$1,546,362	\$2,775,521
<b>Total 5-Year Cost</b>	<u>\$1,034,852</u>	<u>\$2,603,821</u>	<u>\$4,673,524</u>

## Software Piracy

The above estimates are based on easily quantifiable costs. There are, however, other costs that are more difficult to quantify precisely. Loss of revenue to software piracy is one such cost.

We all know that illegal copying results in lost revenues. The BSA/IDC annual survey attempts to measure the effect of piracy globally, and the latest survey (released in May, 2010) estimates a global piracy rate of 42%. Regional estimates are as follows:



However, piracy rates do not translate directly into actual revenue loss. You need to look at where you actually sell your software (e.g. the published rate in Central and Eastern Europe is 64% but it is only 21% in North America). Moreover, not all pirated software represents recoverable revenues. In a recent survey carried out by KPMG, for example, while a third of the respondents estimated their own losses (and, therefore, recoverable revenues) to be in excess of 10%, another third estimated those real losses to be less than 5%.

This means that you need to make an informed assessment of actual, recoverable revenues. Further, these revenues must be factored into the cost of a homegrown solution, because this cost will continue to be incurred until the solution is implemented. What's more, if the solution is not up to the task of reducing piracy, revenues will continue to be lost going forward – even after the solution is in place.

## Consider the Advantages of a Commercial Solution

Taking into account all the potential costs, a homegrown solution can prove to be expensive to implement. Further, the TCO over the lifetime of the solution represents a significant, ongoing investment that can exceed the initial development costs in all three cases examined.

Given the level of investment required to produce and maintain a solution that really does the job it is meant to do, there is good reason to examine alternatives – particularly those presented by commercial solutions that are specifically designed to meet the software licensing and management needs of technology vendors.



LicensingLive!™ (lahy'sun sing lahyv'),  
adj. n. [SAFENET, INTERACTIVE]

1. Immediate access to the best practices and emerging challenges associated with software packaging, pricing, fulfillment, delivery and management. 2. A forum bringing together software vendors, industry analysts, licensing consultants and technology vendors.

Implementing a commercial solution can deliver a number of important fiscal advantages over a homegrown licensing and management solution. These include:

- Initial cost savings in implementation.
- Lower ongoing costs. A vendor adopting a commercial solution will need to invest less in supporting that solution, because the solution provider assumes most of the responsibility for enhancements, new features and meeting emerging opportunities and threats.
- Faster ramp-up time. Even if the commercial solution isn't ready to go out of the box, you can still expect to have it operational much faster than a homegrown solution to begin realizing the benefits of the solution sooner.

A commercial solution may also offer additional, qualitative advantages over a homegrown solution. Many commercial solutions are more robust than comparable homegrown solutions. They may provide specialized tools and role-based support that contribute to greater operational efficiency. Good commercial solutions are also set to scale, allowing vendors to grow the solution – along with their business – with only incremental additional investment. Moreover, commercial licensing and protection solutions tend to provide much more comprehensive, higher levels of security – both against piracy and to protect IP assets – that are outside the scope of what the typical vendor can invest in as part of a homegrown solution.

### SafeNet Sentinel Software Monetization Solutions

SafeNet has more than 25 years of experience in delivering innovative and reliable software licensing and entitlement management solutions to software and technology vendors worldwide. Easy to integrate and use, innovative, and feature-focused, the company's family of Sentinel® Software Monetization Solutions are designed to meet the unique license enablement, enforcement, and management requirements of any organization, regardless of size, technical requirements or organizational structure. Only with SafeNet are clients able to address all of their anti-piracy, IP protection, license enablement, and license management challenges while increasing overall profitability, improving internal operations, maintaining competitive positioning, and enhancing relationships with their customers and end users. With a proven history in adapting to new requirements and introducing new technologies to address evolving market conditions, SafeNet's more than 25,000 customers around the globe know that by choosing Sentinel, they choose the freedom to evolve how they do business today, tomorrow, and beyond.

For more information on SafeNet's complete portfolio of Software Monetization Solutions for installed, embedded, and cloud applications or to download a free evaluation of our award-winning products please visit [www.safenet-inc.com/sentinel](http://www.safenet-inc.com/sentinel)

To download a FREE SENTINEL HASP Developer Kit, visit: [www.safenet-inc.com/HASPK](http://www.safenet-inc.com/HASPK)

#### Join the Conversation

Sentinel Online  
[www.Safenet-inc.com/sentinel](http://www.Safenet-inc.com/sentinel)



Twitter  
<http://twitter.com/#!/LicensingLive>

LinkedIn  
<http://bit.ly/LinkedInLicensingLive>

YouTube  
<http://www.youtube.com/user/LicensingLive>

BrightTALK™ BrightTalk  
<http://www.brighttalk.com/channel/5572>

**Contact Us:** For all office locations and contact information, please visit [www.safenet-inc.com](http://www.safenet-inc.com)

**Follow Us:** [www.safenet-inc.com/connected](http://www.safenet-inc.com/connected)

©2010 SafeNet, Inc. All rights reserved. SafeNet and SafeNet logo are registered trademarks of SafeNet. All other product names are trademarks of their respective owners. WP (EN)-12.03.10