Valuing Domain Names

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Abstract

This monograph describes the methodologies, procedures, and analyses related to valuing a domain name. The first section outlines the components of intrinsic value in a domain name. The second describes the various approaches to valuing the components, in particular using regression-tree statistical models and economic value using discounted cash-flow techniques. The limitations of these techniques and remedies are also presented.

(A) INTRODUCTION

A domain name can create value to the owner by generating earnings from an active Web site. In fact, even if a domain name does not have an active Web site, it can still be generating income as measured by cost savings associated with preventing a cybersquatter or competitor from siphoning away sales.

Domain-name ownership confers the owner with two types of rights. The first is related to managerial flexibility, such as when to develop an associated Web site, when to abandon the operation of the Web site while retaining ownership of the domain name itself, when/whether to renew registration and for how long. The second right is associated with trademarks. If a domain name is trademarkable, the owner has the right to legal protection; that is, the owner can prevent anyone else from claiming the domain name, if he/she wishes to exercise that right. The options available to the trademark owner are to take a trademark violator to court, to buy the domain name, or to take no action. This flexibility has value, which is embedded in an option. Thus, these options are valuable managerial tools that cannot be ignored.

Thus, the value of a domain name comes in two forms: expected earnings and options to take actions. The latter component can be broken down into managerial flexibility (referred to in finance literature as real options) and a trademark-related option.

> Hence, the value of a domain name is the sum of the value of its expected earnings, the value of its managerial flexibility, and the value of its trademark option.

(B) VALUATION APPROACHES

As recognized by the *Uniform Standards of Professional Appraisal Practice* (USPAP), there are three generally accepted approaches to estimating the value of all assets**:** (1) the market approach, intended to reflect comparative market prices; (2) the income approach**,** intended to reflect economic value; and (3) the cost approach, intended to reflect the utility characteristics of the asset. These approaches apply to intangible assets and intellectual properties, as well as to tangible property.

Each valuation approach emphasizes a different attribute of a domain name. Using all applicable approaches may increase the confidence level of value conclusions. Nevertheless, poorly supported valuations result from the naïve use of all three approaches. The information that is available for valuation should determine the approach used.

The market approach examines the comparative characteristics of reasonably competitive properties. When there are sufficient market-driven transactional data from which to estimate comparable domain names, this approach is appropriate. If the selected

comparable domain names are not, indeed, comparable to the subject domain name, the market approach is weakened.

The income approach relies on the cash flow that the domain name is expected to generate over its life. As such, this approach requires a reasonable estimate of future cash flows and their risk. Thus, quality of valuation depends on the accuracy of the estimates used in the valuation model.

The cost approach looks at the cost to reproduce or replace an asset. This approach is not appropriate for domain names and intangible assets, since the cost to replace such an asset is seldom reflective of its value, except at the inception of its life.

(1) Market Approach

A market approach to domain-name valuation is both an art and a science. The art comes from knowledge and experience in understanding the factors that influence the value of a domain name, while the science involves statistical techniques to quantify the importance of these factors.

(a) The Issues

What is the price of xyz.net or xyz.biz? How different from xyz.com are they?

To answer such questions, let's consider the following examples:

Example 1. Domain Name xyz

Extension	Sale Price ($)
com	600
net	300
biz	200

Example 2. Domain Name xyzz

Extension	Sale Price ($)
com	300
net	150
biz	100

The above examples suggest that .net is half the price of .com, while .biz is one-third the price of .com. Thus, it seems that if you know the price of a name with any of the above extensions, you will easily be able to value the other extensions.

Unfortunately, however, in reality, pricing different domain-name extensions is not such a simple task. There are two major obstacles: there are not enough domain names with different extensions sold, and the pricing relationship between different extensions may not be a constant multiple of each other.

To overcome the above shortcomings, one can use statistical techniques to predict the price of comparable domain names based on a reliable database of domain prices.

We have developed a statistical model to predict the price of a domain name. Statistical models are a prerequisite to performing any meaningful appraisal. With such a model in hand, one can measure how good the prediction is and can strive to improve the model's prediction accuracy.

(b) Statistical Modeling

Statistical models use the relationship between these factors and prices of domain names that have been sold to determine the price of a given domain name at a specific point in time. These models provide a scientific method of estimating value based on comparables.

Traditional linear-regression techniques don't yield satisfactory results, as the relationship between market price and the extensions is most likely to be nonlinear. Thus, in technical terms, "dummy variables" for each extension would not yield meaningful results. Moreover, because the domain-name market is relatively new and not very active, more robust statistical techniques are needed.

At the heart of our regression-tree statistical model is a set of predictors of demand for domain names and historical prices of sold names. The estimated model yields the best relationship between the specified predictors and value. This relationship is used to predict the price of any domain name. One of the obvious predictors is the domain extension. Another of the 12 quantifiable predictors we use is the number of searches in Google for the keyword embedded in a domain name. The predictors are selected based on statistical techniques as well as on our extensive knowledge and expertise in the domain-name marketplace.

Typically, the basic appraisal services do not take directly into account the contribution of a trademark to the appraisal value, as trademark valuation requires extensive domain-specific calculations and data collection. An income approach is more appropriate for this class of domains.

We forecast the price based on a statistical model for the form:

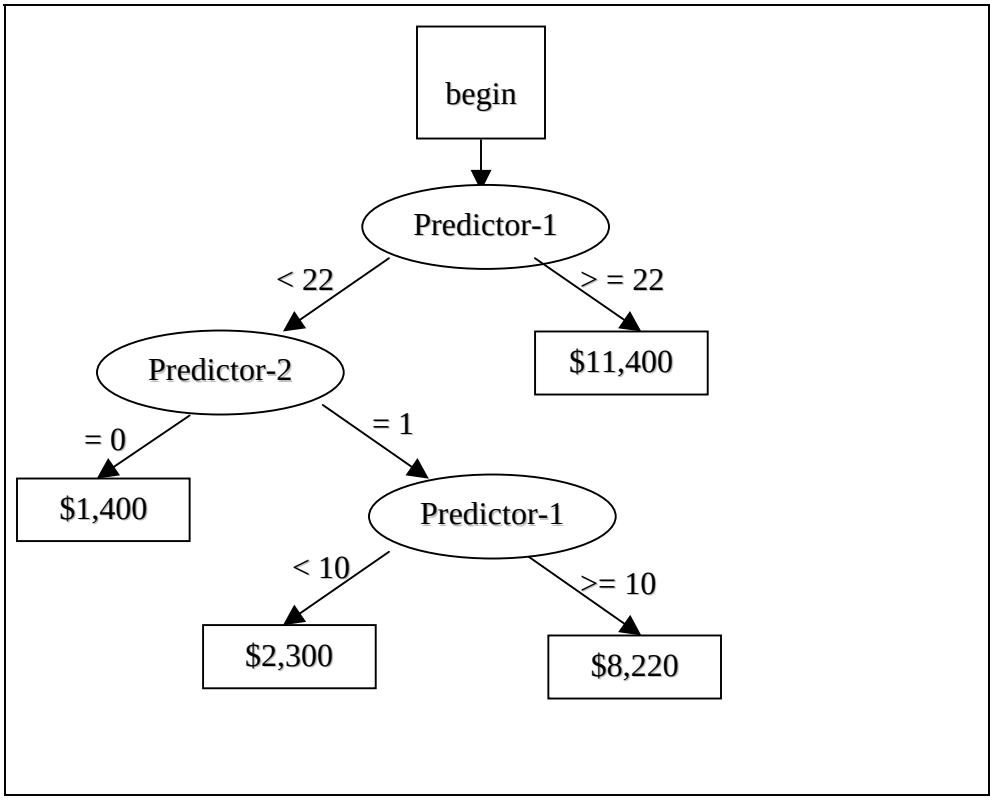
$$\text{Price} = f(X_1, X_2, ..., X_N),$$

where Value is the estimated market value of a domain name, f ( ) is a nonlinear function that also allows interaction between the predictors, and X_i is the i^{th} predictor of Value.

Before selecting a predictor, we require that it make economic sense — i.e., it must be a meaningful predictor of profit (for example, even if "the number of sun spots" were highly correlated with Value, it would not qualify as a predictor). Moreover, the data available should reflect the true relationship between the predictor and Value (for example, if one expects a positive relationship between them, the data should support such an assertion; otherwise**,** the predictor would not be used).

A regression-tree model can be illustrated using Figure 1 below:

Figure 1. A Two-Predictor Tree Example



In the above stylized regression-tree model, factor 1 can represent, say, the number of advertisers on Google for the keywords implicit in the domain name, while predictor 2, say, if the .biz is registered (predictor-2 = 1) or not (predictor-2 = 0). Thus, for any domain name to be appraised, if at time of appraisal it has more than 22 advertisers on Google, its appraised value would be $11,400. If it has less than 22 Google advertisers, the equivalent .biz domain name is registered, and has Google advertisers greater than 10, its appraised value is $8,220.

Thus, the model is powerful to handle nonlinear relationships between the predictors and Value. Also the predictors can be discrete variables (0 or 1).

Given the above estimated regression-tree, a domain name that has Predictor-1 greater than 22 units, would have an estimated market value of $11,400.

Tree-structure estimation techniques are used to estimate the model, yielding a model superior to the standard least-squares regression approach. Given the set of qualified predictors, the final predictors used are the ones that minimize the fitted deviance (the difference between the actual sale price and the predicted Value). Because such models don't use the standard measures of goodness-of-fit to provide you an idea of the quality of our model, we use the R-squared from the linear model:

$$\text{Value} = b_0 + b_1X_1 + b_2X_2 + \ldots + b_NX_N,$$

where b_i is the estimated regression coefficient for X_i.

Using our predictors in a linear model yields a multiple R-squared of .78, i.e., the model explains 78% of the variations in the prices of sold domain names. Thus, the nonlinear model used in our Appraisal Report yields a more reliable predicted value than the linear model.

(c) Valuation Database

In estimating the predictive model for Value, we use transaction prices collected from publicly available auctions, as well as prices from proprietary-domain escrow and sealed bid auction data. For each of the prediction variables, data are collected from publicly available sources at time of sale. Thus, the only proprietary data used are transaction prices from domain-name escrow and customized auctions through DomainMart.

The starting period for which complete data on predictors is available is November 2002. As of April 2005, the database has over 2,000 observations.

(2) Income Approach

(a) Methodology

This option is typically used for predicting benchmark profit-potential of a website and appraising active websites and domain names that involve trademarks.

The income approach to valuation, also called the Discounted Cash Flow (DCF) method, is one of the tools used to value any asset, including domain names; the

earnings represent the additional or incremental cash flows the domain name is expected to generate to the owner over the life of the domain name.

(b) Estimation

DCF analyses require access to information on traffic, revenue, and costs associated with the business. To use this powerful valuation tool to estimate a benchmark value for a website, we assume that the domain name is parked to generate traffic revenue. The strength of the approach is that it can be applied to any domain name irrespective of whether it is parked or not.

The traffic income business model focuses on domain names that generate clicks. This is achieved by placing advertiser links on a webpage. Every time a visitor clicks on any of the links the advertiser pays the link manager a fee, i.e., pay-per-click (PPC).

The availability of reliable public information on keyword searches and revenue from PPC advertising has made valuation based on traffic income a compelling domain-name valuation methodology.

The advantages of the income-based over the market-based methodology are founded on the following facts:

1. The median sales price of catalog listings is about $500. Moreover, only a small number of sales are in the tens of thousands. Thus, applying statistical models to value premium domain names will not yield precise estimates due to the paucity of data.

2. For a specific level of website traffic, the extension of a traffic-revenue domain name should be irrelevant, holding other factors constant. However, sales data suggests that .com names command a considerable premium, even after controlling for keyword composition. Thus, using an income approach for such domain names yields a more accurate appraisal.

3. Only a small fraction of domain names sold are hyphenated. Thus, as in (2) above, they are undervalued by a statistical model.

4. Historical market prices, especially those for domain names sold on auctions, suffer from asynchronous demand and supply, whereby not all parties interested in the domain name would be aware of its sale or willing to commit by the end of the auction. Thus, the sale price might not reflect the market's true willingness to pay for the domain name.

5. The income approach allows various CF scenarios to be considered, typically a "best case," a "worst case," and a "middle of the road." Such an analysis provides a more intuitive picture of the range of possible market values.

The advantages of DomainMart's hypothetical parked domain name methodology over using historical data from parked domain names are:

1. Grouping comparable parked domain names based on historical data involves considerable classification error (incorrectly including sales within a group of "similar" names or excluding sales belonging to a group), especially in clusters with few data points on sales. Thus, the results would be less reliable. This error is magnified when classification is based on arbitrary techniques.

2. Brokers tend to keep historical parking revenue information private. Thus, diminishing the transparency and verifiability of appraisals based on historical parking data.

The advantages of DomainMart's parked-domain methodology over a historical revenue approach are:

1. It does not require access to private income data, which a domain name owner might be reluctant to provide.

2. It does not require an active domain name. On the other hand, without historical income data, a revenue model cannot be estimated.

3. It is considerably cheaper.

(C) LIMIATIONS

Neither the market approach nor the DCF technique captures the value of flexibility options. Thus, an appraiser can use the DCF method to estimate the earnings component and use option-pricing-theory models to estimate the two option components separately. Although in principle, an appraiser can use decision-tree analysis to estimate flexibility options, an option-pricing methodology can be much simpler to formulate. Moreover, DCF techniques require estimating the risk of cash flows, whereas the option-pricing methodology overcomes this difficulty, especially when this risk is not constant, as assumed by the DCF method.

Let's look at the trademark-option component by considering the action of a cybersquatter (someone who registers a domain name that constitutes a trademark infringement). Such an action is equivalent to writing a put option on the domain name, in that the cybersquatter is legally obligated to surrender the domain name. However, the owner of the domain name has the option to surrender the domain name, litigate, or take no action. One could use discounted decision-tree methods to value such a domain name by considering the different actions and counter-actions that an owner of the trademark and a cybersquatter can take and the consequences of each action. However, this process

would, at best, be cumbersome, compared with an option-pricing model. In fact, even if a domain name has no associated trademark, as long as that domain name is trademarkable, it has a higher value (other things being equal) than a non-trademarkable domain name of a generic word. Obviously, the higher the value of a trademark, the higher the value of the associated domain name. However, an analyst has to be careful in distinguishing between the contribution to value from the trademark and that from the earnings component.

In sum, taking account of flexibility options and trademark options embedded in domain names provides a more accurate domain-name appraisal than using the DCF method alone.